DOCUMENT RESUME

ED 064 619 AC 012 717

| | |
|---|---|
| AUTHOR | Leedy, Herbert B. |
| TITLE | Training in Mechanized Stock Accounting Systems in Army Logistics. |
| INSTITUTION | Human Resources Research Organization, Alexandria, Va. |
| SPONS AGENCY | Office of the Chief of Research and Development (Army), Washington, D.C. |
| REPORT NO | HumRRO-TR-72-16 |
| PUB DATE | May 72 |
| NOTE | 137p. |
| EDRS PRICE | MF-$0.65 HC-$6.58 |
| DESCRIPTORS | *Computers; Data Processing Occupations; *Electronic Data Processing; Facility Inventory; *Job Training; Military Personnel; *Military Training |
| IDENTIFIERS | NCR 500 |

ABSTRACT

Army experience with a small mechanized stock accounting system, the NCR 500, was studied with respect to personnel and training, in order to improve implementation of newer and more complex computer-based logistics systems. Officers and enlisted personnel in various duty positions connected with NCR 500 systems in four Far Eastern commands were interviewed. Data showed there had been a continual input of underskilled personnel into nearly all of the duty positions in the mechanized stock accounting system and at its major interfaces. Interviews indicated that efficiency would have been promoted by (1) integrating NCR 500 procedures and concepts with repair parts supply procedures and concepts, (2) a total systems approach to training, (3) upgrading the storage operation as well as the supporting stock accounting system, (4) assigning more well-qualified technical supply officers, and (5) training in the NCR 500 system for more noncommissioned officers with repair parts supply experience. (Author)

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

DoD
AC

Technical
Report
72-16

HumRRO-TR-72-16

HumRRO

ED 064619

# Training in Mechanized Stock Accounting Systems in Army Logistics

Herbert B. Leedy

HUMAN RESOURCES RESEARCH ORGANIZATION
300 North Washington Street • Alexandria, Virginia 22314

May 1972

AC 012 717

Prepared for
Office of the Chief of Research and Development
Department of the Army
Washington, D.C. 20310

HumRRO
Technical
Report
72-16

ED 064619

# Training in Mechanized Stock Accounting Systems in Army Logistics

Herbert B. Leedy

HumRRO Division No. 1 (System Operations)
Alexandria, Virginia

HUMAN RESOURCES RESEARCH ORGANIZATION

May 1972

Prepared for

Office of the Chief of Research and Development
Department of the Army
Washington, D.C. 20310

2

The Human Resources Research Organization (HumRRO) is a nonprofit corporation established in 1969 to conduct research in the field of training and education. It is a continuation of The George Washington University Human Resources Research Office. HumRRO's general purpose is to improve human performance, particularly in organizational settings, through behavioral and social science research, development, and consultation. HumRRO's mission in work performed under contract with the Department of the Army is to conduct research in the fields of training, motivation, and leadership.

The findings in this report are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.

Published
May 1972
by
HUMAN RESOURCES RESEARCH ORGANIZATION
300 North Washington Street
Alexandria, Virginia 22314

Distributed under the authority of the
Chief of Research and Development
Department of the Army
Washington, D.C. 20310

# FOREWORD

The research reported here is an effort to determine the Army's experience with the introduction of a small mechanized stock accounting system, using the NCR 500, with respect to personnel and training, in order to better enable the Army to take advantage of this experience in implementing newer and more complex computer-based logistics systems. The report identifies duty positions where general training needs exist for implementation of such systems.

The data for this report were collected in a survey of 13 NCR 500 systems located in four Far Eastern Commands. Interviews were held in mid-1969 with 128 officers and enlisted men serving in nine duty positions connected with these systems. The survey was conducted under Work Unit ACCOUNT, Analysis of Army Experience in Implementing a Mechanized Stock Accounting System.

The results of this survey were originally compiled in April 1970, and provided to operational personnel at that time. This report is a summary of the findings, and is presented here as a model for studying the problems of implementing a mechanized stock accounting system.

This research was conducted by HumRRO Division No. 1 (System Operations) at Alexandria, Virginia. The Director of the Division is Dr. J. Daniel Lyons. Dr. C. Dennis Fink was the Program Director and Dr. Herbert B. Leedy was the Work Unit Leader.

HumRRO research for the Department of the Army is conducted under Contract DAHC 19-70-C-0012. Training, Motivation, Leadership research is conducted under Army Project 2Q062107A712.

Meredith P. Crawford
President
Human Resources Research Organization

# SUMMARY AND CONCLUSIONS

## PROBLEM

Reports produced by various Department of the Army study groups indicated that the effectiveness of repair parts supply at the direct support and general support levels of the Army logistics system could be improved by the automation of the stock accounting function. A simple electronic bookkeeping machine system, the NCR 500, was introduced for this purpose.

Several sources of information have indicated that the efficiency of this mechanized stock accounting system has been less than optimal. This information indicates that the general problem was the management of the system. Management problems appeared to manifest themselves not only within the system, but at its interfaces as well. The management problems appeared to obtain primarily because training did not seem to have been given to a sufficient number of personnel, particularly managers, who supervised, evaluated, provided input, or used output from the system.

This study had two objectives:

First, to determine the Army's experience in introducing the NCR 500 with respect to personnel and training, in order to better enable the Army to take advantage of this experience in implementing newer and more complex computer-supported logistics systems.

Second, to determine those jobs in the mechanized stock accounting system and at its interfaces for which training needs appear to exist.

## METHOD

An interview guide was developed for each of nine types of duty positions, both within the mechanized stock accounting system and in interfacing activities. Information in the following general categories was obtained: NCR 500 system training and experience; supply training and experience; management; staffing; personnel turnover; attitudes toward the NCR 500 system; and contact with the Computer System Command DSU/GSU Field Teams.

Interview data were obtained by tape-recorded, open-ended, in-depth interviews. In mid-1969 interviews were held with 128 officers and enlisted personnel serving in the various duty positions connected with 13 different NCR 500 systems located in four Far Eastern commands. Neither the personnel interviewed nor the NCR 500 systems were selected by probability sampling methods.

## RESULTS

Analysis of the interview data led to the following findings:

(1) There has been a continual input of underskilled personnel into nearly all of the duty positions in the mechanized stock accounting system and in its two major interfacing activities. This situation appears to have been a function of the lack of training, personnel turnover, and the attrition (exodus from the Army) of first-line supervisors.

(2) There has been a need for additional training and for performance aid support for both the NCR 500 system and repair parts supply procedures at every duty position category, although this need was greater for some duty positions than for others.

(3) Personnel turnover has resulted in trained and/or experienced personnel being replaced by personnel who might have had some training but who were not experienced.

(4) Approximately three-fourths of the first-line managers and operators of the NCR 500 systems were leaving the Army.

(5) More than four-fifths of the respondents were serving in duty positions to which one of their MOSs was either identical or related. This is considered a potentially misleading statistic in the light of the evidence of the need of the respondents for additional training.

(6) The respondents generally felt that the NCR 500 was an efficient system and that it was more efficient than the manual stock accounting system.

(7) The mechanized stock accounting systems were generally considered to be adequately staffed, but there was some indication that the associated warehouses were considered to be inadequately manned.

(8) The manager personnel tended to feel that the U.S. Army Computer Systems Command DSU/GSU Field Teams were providing valuable management assistance.

## CONCLUSIONS

Mechanized stock accounting system efficiency would have been promoted by the following:

(1) A total systems approach to training that included training for all duty positions in the mechanized stock accounting system and at its major interfaces; integration of NCR 500 procedures and concepts with repair parts supply procedures and concepts; upgrading of the storage operation as well as the supporting stock accounting system.

(2) Assignment of a well-qualified Technical Supply Officer.

(3) More noncommissioned officers with repair parts supply experience trained in the NCR 500 system.

(4) More field training in any or all of the following forms: (a) a model DSU with "hands on" training; (b) on-the-job training courses; and (c) performance aid systems.

Mechanized stock accounting system efficiency was promoted by the assistance provided by the U.S. Army Computer Systems Command DSU/GSU Field Teams.

# CONTENTS


| Chapter | | Page |
|---|---|---|
| 1 | **Problem and Method** | 3 |
| | Background | 3 |
| | Repair Parts Stock Accounting | 3 |
| | The NCR 500 Computer System | 4 |
| | Mechanized Stock Accounting System Problems | 4 |
| | Objectives | 5 |
| | Method | 5 |
| | Mechanized Stock Accounting Systems Visited | 5 |
| | Respondents | 7 |
| | Data Collection Technique | 9 |
| | Interview Guides | 9 |
| | Analysis | 9 |
| | Organization of Report | 10 |
| 2 | **Battalion Management Personnel** | 11 |
| | Group Composition | 11 |
| | Mechanized Stock Accounting System Training | 14 |
| | Repair Parts Supply Training and Experience | 16 |
| | Problems in Mechanized Stock Accounting Systems | 17 |
| | Attitudes Toward the Mechanized Stock Accounting System | 20 |
| | Use of Inspection Checklist | 21 |
| | Contact with Computer Systems Command DSU/GSU Field Teams | 21 |
| 3 | **Technical Supply Officers** | 23 |
| | Job Description | 23 |
| | Mechanized Stock Accounting System Training | 25 |
| | Formal, Informal, and Combined Training | 25 |
| | Mechanized System Experience | 26 |
| | Training in Repair Parts Supply | 27 |
| | Problems in Mechanized Stock Accounting | 27 |
| | Attitudes Toward Mechanized Stock Accounting System | 30 |
| | Contact with the Computer Systems Command DSU/GSU Field Teams | 31 |
| 4 | **Platoon Sergeant** | 32 |
| | Job Description | 32 |
| | Group Composition | 32 |
| | Mechanized Stock Accounting System Training | 34 |
| | Formal, Informal, and Combined Training | 34 |
| | Mechanized System Needs | 34 |
| | Training in Repair Parts Supply | 35 |

| Chapter | | Page |
|---|---|---|
| | Mechanized Accounting System Problems | 36 |
| | Attitudes Toward the Mechanized Stock Accounting System | 37 |
| | Contact with the Computer Systems Command DSU/GSU Field Teams | 38 |
| 5 | **Stock Accounting NCOs** | 39 |
| | Job Description | 39 |
| | Group Composition | 39 |
| | Mechanized Stock Accounting System Training | 43 |
| | Formal, Informal, and Combined Training | 43 |
| | Mechanized System Training Needs | 44 |
| | Repair Parts Supply Training | 45 |
| | Mechanized Stock Accounting System Problems | 46 |
| | Attitudes Toward the Mechanized System | 47 |
| | Comparison of Mechanized and Manual Systems | 48 |
| | Attitudes Toward Mechanized System Publications | 48 |
| | Career Intentions | 48 |
| | Contact with Computer Systems Command DSU/GSU Field Teams | 48 |
| 6 | **Mechanized Stock Accounting System Equipment Operators** | 50 |
| | Job Description | 50 |
| | Group Composition | 50 |
| | Mechanized Stock Accounting System Training | 50 |
| | Formal, Informal, and Combined Training | 50 |
| | Comment on Training | 52 |
| | Repair Parts Supply Training and Experience | 53 |
| | Mechanized Stock Accounting System Problems | 53 |
| | Attitudes Toward the Mechanized Stock Accounting System | 53 |
| | Contact with Computer Systems Command DSU/GSU Field Teams | 54 |
| 7 | **Storage Activity Supervisors** | 56 |
| | Group Composition | 56 |
| | Mechanized Stock Accounting System Training and Experience | 56 |
| | Repair Parts Supply Training and Experience | 58 |
| | Mechanized Stock Accounting System Problems | 59 |
| | Attitudes Toward the Mechanized Stock Accounting System | 60 |
| | Contact with Computer Systems Command DSU/GSU Field Teams | 60 |
| | Comment on Storage Activity | 61 |
| 8 | **Warehousemen** | 62 |
| | Group Composition | 62 |
| | Mechanized Stock Accounting System Training | 62 |
| | Repair Parts Supply Training | 64 |

Chapter

Page

Mechanized Stock Accounting System Problems . . . . . 65
Attitudes Toward Mechanized Stock Accounting System . . . . . 65
Contact with the Computer Systems Command DSU/GSU Field Teams . . . . . 66

9 PLL Clerk Supervisors . . . . . 67
Group Composition . . . . . 67
Mechanized Stock Accounting System Training . . . . . 67
Repair Parts Supply Training . . . . . 72
Mechanized Stock Accounting System Problems . . . . . 73
Attitudes Toward the Mechanized Stock Accounting System . . . . . 73

10 PLL Clerks . . . . . 74
Group Composition . . . . . 74
Mechanized Stock Accounting System Training . . . . . 79
Repair Parts Supply Training and Experience . . . . . 79
Mechanized Stock Accounting System Problems . . . . . 80
Attitudes Toward the Mechanized Stock Accounting System . . . . . 80

11 Summary . . . . . 82
Basic Problem . . . . . 82
Training of Personnel . . . . . 82
Personnel Turnover . . . . . 83
Conclusions . . . . . 87

Appendices
A Basic Interview Questions . . . . . 93
B Selected Quotations from Personnel Interviewed . . . . . 97
C Survey Data Summarized Across Nine Duty Positions . . . . . 113

Figure
1 Typical DSU Structure and Interfacing Activities . . . . . 7

Tables
1 Mechanized Stock Accounting Systems From Which Data Were Collected . . . . . 6
2 Number of Respondents Interviewed Per NCR 500 System by Duty Position . . . . . 8
3 Battalion Management Personnel Respondents . . . . . 12
4 Technical Supply Officers: Relationship Between Duty, Primary and Secondary MOSs . . . . . 24
5 Platoon Sergeants: Relationship Between Duty MOS and Primary or Secondary MOS . . . 33
6 Stock Accounting NCOs: Relationship of Duty MOS to Primary or Secondary MOS . . . . . 40

Tables


| | | Page |
|---|---|---|
| 7 | Mechanized Equipment Operators: Relationship of Duty MOS to Primary or Secondary MOS | 51 |
| 8 | Storage Activity Supervisors: Relationship of Duty MOS to Primary or Secondary MOS | 57 |
| 9 | Warehousemen: Relationship of Duty MOS to Primary or Secondary MOS | 63 |
| 10 | PLL Clerk Supervisors: Relationship of Duty MOS to Primary or Secondary MOS | 68 |
| 11 | PLL Clerks: Relationship of Duty MOS to Primary or Secondary MOS | 75 |
| 12 | Area of Use and Type of Training That Might Further Efficiency of the Mechanized Stock Accounting System | 84 |
| C-1 | Relationship of Primary or Secondary MOS to Duty MOS | 115 |
| C-2 | Average Number of Months on the Job | 116 |
| C-3 | Formal and Informal Mechanized Stock Accounting System Training | 117 |
| C-4 | Formal, Informal, and Combined Mechanized Stock Accounting System Training | 117 |
| C-5 | Prior Mechanized Stock Accounting System Experience | 118 |
| C-6 | Mechanized Stock Accounting System Training Needs | 118 |
| C-7 | Formal Repair Parts Supply Training | 119 |
| C-8 | Repair Parts Supply Experience | 120 |
| C-9 | Mechanized Stock Accounting System Management Problems | 121 |
| C-10 | Warehousing Problems | 121 |
| C-11 | Problems With DSU Personnel | 122 |
| C-12 | Problems With Customers | 123 |
| C-13 | Staffing: Mechanized Stock Accounting System and Storage Activity | 124 |
| C-14 | Attitudes Toward Efficiency of the Mechanized Stock Accounting System | 125 |
| C-15 | Mechanized Stock Accounting System Compared to Manual System | 125 |
| C-16 | Manual Stock Accounting System Advantages Over Mechanized Stock Accounting System | 126 |
| C-17 | Attitudes Toward Mechanized Stock Accounting System Publications | 127 |
| C-18 | Career Intentions | 127 |
| C-19 | Contact With Computer Systems Command DSU/GSU Field Teams and Type of Assistance Received | 128 |

# Training in Mechanized Stock Accounting Systems in Army Logistics

Chapter 1

# PROBLEM AND METHOD

## BACKGROUND

This report summarizes research concerned with the development of a prototype performance, or job-aid system, for a small mechanized stock accounting system used by the United States Army for repair parts at the general support and direct support levels of the Army logistics system in the field. The NCR 500[1] computer system serves as a vehicle for this stock accounting function.

## REPAIR PARTS STOCK ACCOUNTING

The availability of repair parts has a profound effect on the combat readiness of the Army. Several studies and analyses have indicated that combat readiness has been degraded by the inability of combat units to get repair parts when they are needed.

A requisition for a repair part is originated by a using unit (company, battery, battalion, etc.), and is forwarded to a direct support unit (DSU) that issues the parts directly to the user. In the event that a requisitioned part cannot be supplied by a DSU, the part is ordered by the DSU from a higher source, usually a supply depot. Which repair part items are stocked at the user unit, the DSU, and the higher supply echelons is determined by the number of demands over a given period.

The repair parts supply system is thus demand-oriented. Accurate demand data are needed throughout the system so that knowledge of requirements and consequent stockage of repair parts at various echelons provide for the necessary responsiveness of the supply system. Accurate recordkeeping, therefore, is of vital importance if repair parts are to be provided as needed and combat readiness maintained.

Several Department of the Army and contract research organization studies over the past few years have been concerned with the state of Army readiness and logistical support. Their reports indicated that under manual procedures, the maintenance of stock accounting records for repair parts at direct support and general support levels is cumbersome, difficult to perform, and subject to considerable human error.

The U.S. Army Materiel Command (USAMC) established a task group in 1965 to study these reported manual deficiencies and to submit recommendations for improving the overall supply effectiveness at the direct support unit and the general support unit (GSU) levels. They determined that a simple electronic bookkeeping machine utilizing a visible posted ledger installed at the DSU and GSU levels could probably ameliorate the stock accounting problem at these echelons.

Tests of the automation of the repair parts stock accounting function were made by the task group. The tests indicated that the mechanization of the operation was feasible and would be a considerable improvement over the manual system. As a result of the tests, the NCR 500 computing system was selected as the basic hardware for the automation of the stock accounting function.

[1] Identification of products is for research documentation purposes only; mention of this system does not constitute an official endorsement by either HumRRO or the Department of the Army.

The Department of the Army began automating selected DSUs in Southeast Asia in October 1966. Since that time, NCR 500 systems have been installed in many direct support units, general support units, and supply points in various other locations, both in continental United States (CONUS) and overseas.

## THE NCR 500 COMPUTER SYSTEM

The NCR 500 is a small-scale bookkeeping machine computer system. The configuration is composed of a programmed central processor, a card reader, a console for reading and posting magnetic ledger cards, and the card punch. The system also has key punch machines and a sorter. The equipment is completely contained in two van-type semitrailers with adequate space for files and operating personnel.

This mechanized stock accounting system is designed to operate within current Army supply doctrine (Military Standard Requisitioning and Issue Procedures—MILSTRIP) by automatic processing of data. Information about each repair part is maintained on a ledger card both visibly and in coded magnetic form. There is one ledger for each repair part item. NCR 500 system output in the form of punched card documents in the MILSTRIP format can serve as input to computers of other echelons of supply.

The personnel contingent is ideally made up of nine operators and a repairman. The remainder of the system consists of maintenance equipment, application procedures in the form of manuals, and operational computer programs.

In a direct support function, the mechanized stock accounting system is found in the supply platoon of either the headquarters and main support company of a division maintenance battalion, or the main support company of a maintenance battalion not attached to a division. Typically, the supply platoon, which includes the corresponding storage activity as well as the mechanized stock accounting system, is under the command of a lieutenant who is known as the Technical Supply Officer.

## MECHANIZED STOCK ACCOUNTING SYSTEM PROBLEMS

Reports by teams of Army personnel engaged in providing operational assistance to or inspecting mechanized stock accounting systems in the field, indicate that the mechanized stock accounting system[1] should function more efficiently. The problems and shortcomings pointed out by the Army personnel were also indicated in HumRRO Exploratory Research 58, Manual Format. This information indicated that the overall problem with NCR 500 performance was management of the system.

Management problems were evident within the system and at its various interfaces. Within the system, management difficulties existed for the Technical Supply Officer who supervised the system, his assistants, the platoon sergeant, the stock control supervisor, and the senior stock accounting specialist. Problems also existed at the level of the maintenance battalion commander and his staff, such as the executive officer and the materiel officer, and for those command echelons above the maintenance battalion. Management problems in varying degrees were also indicated for the DSU warehouse, the depot or higher supply source, and finally for the units supported by the DSU, the customers.

[1] Throughout this report the term mechanized stock accounting system will be used to designate both the NCR 500 computer system equipment, its software, procedures, and the stock accounting function that the equipment supports.

At a more fundamental level, management problems with the mechanized stock accounting system appeared to be related to training. In essence, training did not seem to have been given to a sufficient number of personnel, particularly managers, who supervised, evaluated, provided input, or used output from the system. In the case of the mechanized stock accounting system equipment operators, training did not appear to have been a problem to the degree indicated in the case of management personnel.

## OBJECTIVES

The general objective of this research was the determination of the Army's experience, with respect to personnel and training, in the introduction of the NCR 500 in the field.

The NCR 500 was the first computer system that the Army introduced in the field for a logistics function on an extensive basis. There are more sophisticated field computer systems either being introduced or to be implemented in the future for logistical operations, such as DLOGS, $CS_3$, COCOAS. Determination of the Army's introduction experience with the NCR 500 in the personnel and training area should enable the Army to take advantage of this experience in the implementation of the newer computer-supported logistics systems.

The primary aim of this research was to determine the location of training needs, that is, the jobs in the mechanized stock accounting system, and at the interfaces of the system, for which training needs appear to exist.

This research was not designed to identify specific training needs or training requirements. Nevertheless, several general areas in which additional training was indicated did become evident in this research and are reported here.

This research was designed to collect information from personnel of individual mechanized stock accounting systems and their interfaces: the associated repair parts storage activity or warehouse; the various command echelons in the maintenance battalion including the battalion commander; the battalion staff officers such as the maintenance officers, the materiel officer, the battalion Technical Supply Officer, and the customers supported by the DSU. Data were not collected from higher supply sources (depots) as training problems specific to the NCR 500 system appeared to be comparatively minor at that level.

## METHOD

### MECHANIZED STOCK ACCOUNTING SYSTEMS VISITED

The survey results in this report were obtained in the field during May-July 1969. At that time, operational NCR 500-based mechanized stock accounting systems were functioning only in Far Eastern commands.

A given NCR 500-based mechanized stock accounting system served as the focal point for the data collection. Interview data were collected from personnel in various jobs within, and associated with, each system visited. Data collection was completed for one system before being started for another.

Data were collected from personnel associated with 13 of approximately 72 systems operational in the Far East at the time. The types of units in which these systems were operating, the types of supported activity, and their location are indicated in Table 1. Only

Table 1

**Mechanized Stock Accounting Systems From Which Data Were Collected**

| Designation | Type of Unit | Type of Unit Primarily Supported | Location |
|---|---|---|---|
| ALPHA | DSU: Transportation Co., Transportation Bn., Non-Division. | Aviation: combat. | Vietnam |
| BRAVO | DSU: HQ and Main Support Co., Maintenance Bn., Non-Division. | Varied: non-combat. | Vietnam |
| FOXTROT | DSU: HQ and A Co., Maintenance Bn., Division. | Infantry, Armor, Artillery: combat. | Vietnam |
| GOLF | DSU: Transportation Co., Transportation Bn., Non-Division. | Aviation: combat. | Vietnam |
| HOTEL | DSU: Main Support Co., Maintenance Bn., Non-Division. | Varied: non-combat. | Vietnam |
| INDIA | DSU: Maintenance Co., Logistical Support Command, Non-Division. | Varied: non-combat. | Vietnam |
| CHARLEY | DSU: Signal Co., Signal Group, Non-Division. | Signal: non-combat. | Thailand |
| DELTA | DSU: HQ and Main Support Co., Maintenance Bn., Non-Division. | Transportation, Construction: non-combat. | Thailand |
| ECHO | DSU: Light Equipment Maintenance Co., Maintenance Bn., Non-Division. | Transportation, Construction: non-combat. | Thailand |
| JULIET | DSU: Ordnance Co., Artillery Brigade, Non-Division. | Missile: non-combat. | Okinawa |
| KILO | DSU: HQ and A Co., Maintenance Bn., Division. | Infantry, Armor, Artillery; non-combat. | Korea |
| LIMA | GSU: Supply Co., Non-Division. | DSU's. | Korea |
| MIKE | Supply Point: FASCOM, Non-Division. | Varied: non-combat. | Korea |

code names are given since complete anonymity of the respondents and their units was maintained.

## RESPONDENTS

The structure of the typical DSU is diagrammed in Figure 1. There were 128 respondents to the interviews. The number of respondents by type of job (duty position) in the DSU structure and by mechanized stock accounting system is listed in Table 2.

Neither the respondents in this study nor the mechanized stock accounting systems visited were selected by probability sampling methods, primarily because of combat

**Typical DSU Structure and Interfacing Activities**

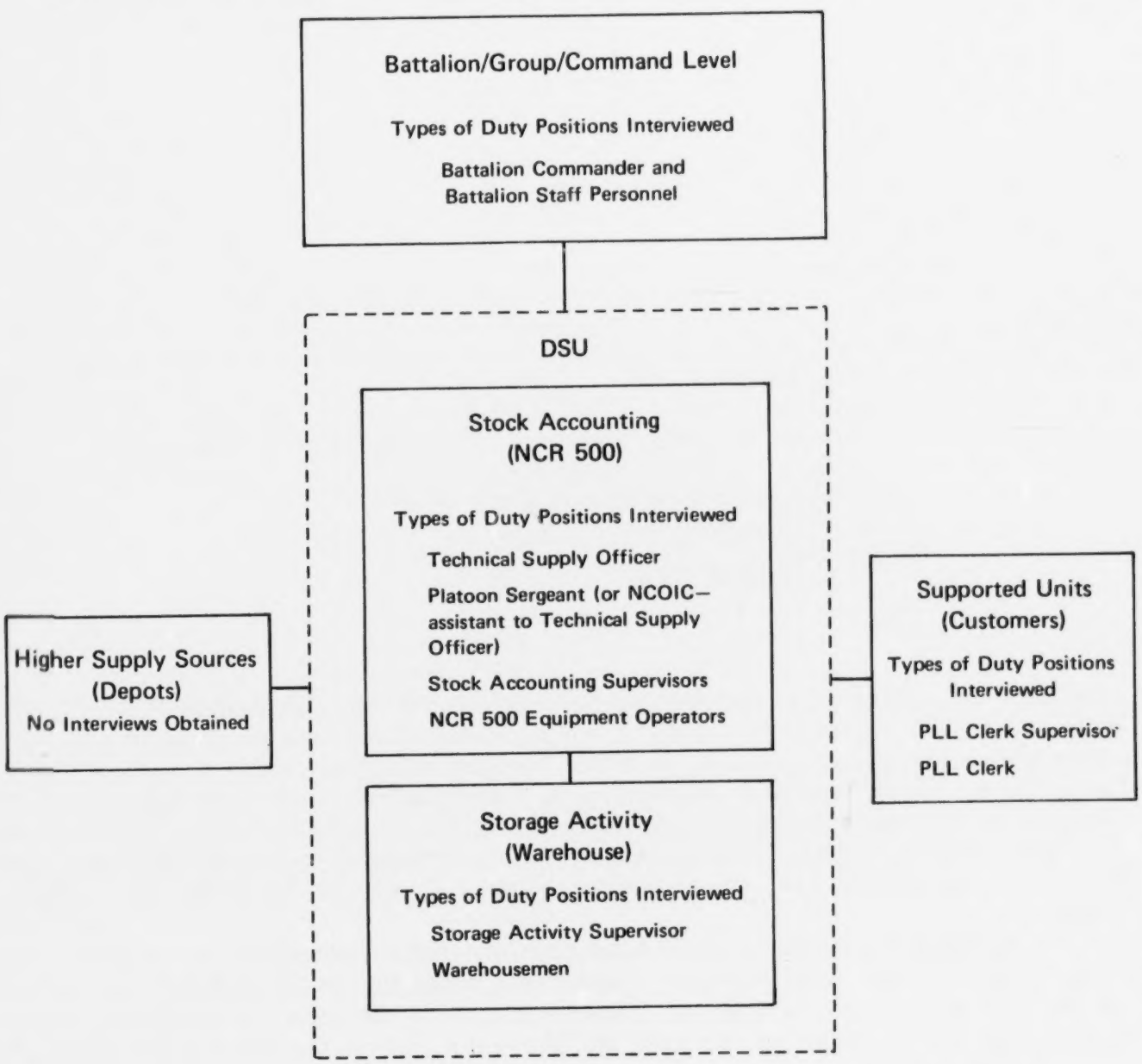


Figure 1

Table 2

**Number of Respondents Interviewed Per NCR 500 System by Duty Position**

| NCR 500 System | Duty Position Number[a] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Total |
| ALPHA | 2 | | 1 | 1 | | | | | | 4 |
| BRAVO | | | | 1 | | | | | | 1 |
| CHARLEY | 2 | 1 | | 1 | | 1 | | 1 | 2 | 8 |
| DELTA | 2 | 1 | 1 | 1 | | | | 1 | | 6 |
| ECHO | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 3 | 5 | 17 |
| FOXTROT | 3 | 1 | | 1 | 2 | 1 | 2 | 2 | 3 | 15 |
| GOLF | 2 | 1 | | 2 | 1 | | | 3 | 5 | 14 |
| HOTEL | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 13 |
| INDIA | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 3 | 12 |
| JULIET | | 1 | 1 | | 1 | 1 | 2 | 1 | 5 | 12 |
| KILO | 1 | 1 | | 1 | 2 | | | 6 | 8 | 19 |
| LIMA | 1 | 1 | | 2 | | 1 | | | | 5 |
| MIKE | | 1 | | 1 | | | | | | 2 |
| Total | 16 | 11 | 6 | 14 | 10 | 7 | 8 | 22 | 34 | 128 |
| Estimated personnel in the job in Far Eastern Commands | 235 | 72 | 72 | 280 | 575 | 215 | 720 | 2880 | 4320 | |

[a] 1 = Battalion management personnel (battalion commander and battalion staff personnel).
2 = Technical Supply Officer.
3 = Platoon Sergeant (or NCOIC - assistant to the TSO).
4 = Stock Accounting Supervisors (Stock Control Supervisor and Senior Stock Accounting Specialist).
5 = Mechanized stock accounting system equipment operators.
6 = Storage activity supervisors.
7 = Warehousemen.
8 = PLL Clerk supervisors.
9 = PLL Clerks.

conditions in Vietnam. The systems and the respondents were deliberately selected to be representative of the different types of command structure, location, type of customer unit supported, and duty position, since this diversity was considered to be important for the purposes of the research. Systems were further selected for those that could be expected to provide a reasonable number of accessible respondents in a relatively short time span, that is, 3-4 days. The mechanized stock accounting systems in the study were chosen by the author and the Computer Systems Command DSU/GSU Field Team, Vietnam.

Every effort was made to avoid hindering operations, particularly in Vietnam. This meant that in some cases preferred respondents could not be interviewed and substitutions had to be made, or that the interview had to be condensed or terminated before completion. These conditions occurred for the most part at the level of the Battalion Commander, his staff, or other management personnel, although operations had an effect on the availability of respondents at virtually all levels.

## DATA COLLECTION TECHNIQUES

Data collection for this survey was planned for the following problem categories that had been indicated by the exploratory study to be of importance to the functioning of the NCR 500 system:

(1) Mechanized stock accounting training and experience
(2) Supply training and experience
(3) Management
(4) Staffing
(5) Personnel turnover
(6) Attitudes toward the NCR 500
(7) Contact with the Computer System Command DSU/GSU Field Teams

The information for this research was collected by the survey method through semistructured interviews. One respondent was interviewed by the author at a time and each interview was tape-recorded. Anonymity of the respondent and his unit was preserved. Names of personnel and units were not recorded. There was no indication that the collection of data by tape recorder had any effect on the interview responses that would have been different than that found by other survey data collection methods, although a systematic comparison of interview data collection techniques was not made.[1]

All of the data pertaining to individual respondents, such as primary, secondary, and duty MOS, time in the duty position, attitudes, opinions, and so forth, were collected directly from the respondents. No TO&Es, personnel records, or other personnel were consulted.

## INTERVIEW GUIDES

The survey questions were open ended, and were followed by probes for more information when the interviewer felt this to be necessary, or when time permitted. Separate guides or questionnaires were developed for each of the nine types of duty positions interviewed, although many of the same questions were asked the respondents in all of the duty positions. The basic interview questions pertinent to this report are listed in Appendix A.

## ANALYSIS

The transcribed interviews were content analyzed and the data tabulated by type of question for each job position. Appendix B contains some quotations from the interviews. These are included in this report because they tend to express the realistic state of affairs.

Statistical analysis, in the sense of the computation of a statistically significant relationship, was not done because the data were not obtained by probability sampling methods, and because the number of respondents interviewed in the different job positions is small. Therefore, these survey data rather than being definitive, indicate likely trends.

The findings of this research generally coincide with two other independent sources: the informal exploratory study completed prior to the data collection for this effort, and

[1] In one instance, the author had to interview two respondents without a tape recorder. No difference was noted between these two interviews and the tape-recorded interviews from the standpoint of willingness to talk.

with the informal comments, memos, and so forth, by various personnel who have been involved with the mechanized stock accounting system. It is felt, therefore, that the trends in the data of this study can be accepted as likely, but not as a basis for specific estimates. The data trends make up the information that is of prime importance in this survey. For example, all of the 11 technical supply officers interviewed said that they had studied the mechanized stock accounting system manuals, SOPs, or briefing materials. The number of technical supply officers in Far Eastern commands who have studied these manuals cannot be estimated from this information, but the trend in these data—which indicates that a rather large number of technical supply officers find it necessary to further their learning in this manner—can be accepted as likely, and is the information that is of importance.

Since the interviews for this study have been completed, several changes have been made in the training for the mechanized stock accounting system. Most of these changes have been in courses for commissioned officers, and are in the direction of more comprehensive training in CONUS schools. The U.S. Army Quartermaster School has developed a comprehensive 32-hour block of instruction that is incorporated in several officer training courses and the Non-commissioned Officer Logistics Program. The U.S. Army Ordnance Center and School has included 15 hours of instruction on the mechanized stock accounting system in several officer and non-commissioned officer courses.

## ORGANIZATION OF REPORT

The main objective of this research was to identify the location of training needs by duty position. Therefore, this report is organized in terms of separate survey reports for each of the nine duty positions interviewed. For easier comparisons between duty positions, tables of data summarized across the various duty positions are presented in Appendix C.

It is important to remember that the smaller the respondent group, the less stable or reliable the data. Since none of the groups of respondents was large, considerable caution should be exercised in making comparisons between groups.

## Chapter 2

# BATTALION MANAGEMENT PERSONNEL

## GROUP COMPOSITION

This group included officers assigned to maintenance battalions who were concerned with repair parts supply management in connection with the maintenance and support activities of their battalion. Officers in this category were, for the most part, only indirectly involved in the supervision of the mechanized stock accounting system. Their essential relationship to this system was the use of supply management information provided by the system. Some of the supply management information utilized was regularly scheduled output, other information was specially requested by some of these personnel. Battalion management personnel also participated in the inspection of the mechanized stock accounting system from time to time.

Included in this group of 16 respondents[1] were maintenance battalion commanders, maintenance battalion staff officers (e.g., materiel officers and technical supply officers), and commanders of main support companies in which the mechanized stock accounting system was located. The Chief of Logistics of a signal group is included with this group of respondents, and was the only respondent at this command level interviewed. The DSU with which he was associated was attached to a signal group and was not part of a battalion. This officer had transactions with this DSU that were were rather similar to those of a battalion commander with a DSU in his battalion. Technical supply officers who command the supply platoon (the DSU) of the main support company are not included in this group of respondents (that duty position is discussed in Chapter 3). Table 3 lists the 16 respondents by DSU, rank, job title, duty MOS, primary and secondary MOS (where available), and relationship between duty MOS and primary or secondary MOS.

Assignment of Personnel. The personnel listed in Table 3 were assigned to duty positions for which they had at least some qualifications. This is indicated by the degree of relationship between the duty MOS and the primary or secondary MOS.

Each of the officers was assigned to a duty position for which either his primary or his secondary MOS was germane: Six said their primary MOS was "identical" to their duty MOS, and seven said it was "related"; two reported their secondary MOS was "identical" to their duty MOS and one "related."

Job Turnover. The amount of time in the duty position held by the respondent at the time of interview was used as an indication of job turnover.[2]

The number of months on the job in Vietnam ranged from 1.5 to 8, with a 4.2 average; in Thailand the range was from 2-11 months with a 7.4 average, while in Korea the range was 5-10 months with a 7.5 average.

Although the number of respondents was low (16) and the representativeness of the data unknown, the average number of months on the job obtained from the

[1] Relevant quotations from personnel interviewed are in Appendix B.

[2] The original intention was to add the number of months on the job to the number of months remaining on the job for a measure of job turnover, but the latter information was not known by several respondents. Therefore, number of months on the job is used as an indication of turnover for all jobs discussed in this report.

Table 3

**Battalion Management Personnel Respondents**

| Direct Support Unit | Rank | Job Title | Duty MOS | Primary MOS | Secondary MOS | Duty MOS Relation to Primary or Secondary MOS[a] |
|---|---|---|---|---|---|---|
| CHARLEY | LTC | Chief of Logistics, Signal Group | 0210 (Signal Officer) | 0210 | --- | Identical to Primary |
| ALPHA | MAJ | Battalion Executive Officer, Transportion Bn. | 4823 (Aircraft Maintenance Officer) | 2167 (Research and Development Coordinator) | 4823 | Identical to Secondary |
| ALPHA | MAJ | Company Commander Transportation Bn. | 4823 (Aircraft Maintenance Officer) | 1980 (Fixed Wing Aviator) | 4823 | Identical to Secondary |
| CHARLEY | CW3 | Accountable Officer, Signal Co. | 761A (Unit Supply Technician | 761A | --- | Identical to Primary |
| DELTA | MAJ | Battalion Executive Officer, Maintenance Bn. | 4803 (Maintenance Officer) | 4803 | --- | Identical to Primary |
| DELTA | CPT | Company Commander, Main Support Co., Maintenance Bn. | 4803 (Maintenance Officer) | 0210 (Signal Officer) | 4400 (Signal Supply Officer) | Related to Primary |
| ECHO | 1LT | Company Commander, Light Equipment Maintenance Co., Maintenance Bn. | 4803 (Maintenance Officer) | 4815 (Mechanical Maintenance) | --- | Related to Primary |
| FOXTROT | LTC | Battalion Commander Maintenance Bn. | 4815 (Mechanical Maintenance Officer) | 4800 (Ordnance Maintenance Officer) | --- | Related to Primary |

*(Continued)*

Table 3 *(Continued)*

**Battalion Management Personnel Respondents**

| Direct Support Unit | Rank | Job Title | Duty MOS | Primary MOS | Secondary MOS | Duty MOS Relation to Primary or Secondary MOS |
|---|---|---|---|---|---|---|
| FOXTROT | MAJ | Battalion Materiel Officer, Maintenance | 4803 (Maintenance Officer) | 4803 | 2170 (Technical Operations Officer) | Identical to Primary |
| FOXTROT | CPT | Battalion Technical Supply Officer, Maintenance Bn. | 4530 (Ordnance Supply Officer) | 4516 (Missile Maintenance Officer) | --- | Related to Primary |
| GOLF | CPT | Battalion Stock Control Officer, Transportation Bn. | 4201 (Supply Management Officer) | 1980 (Fixed Wing Aviator) | 4823 (Aircraft Maintenance Officer) | Related to Secondary |
| GOLF | MAJ | Company Commander, Transportation Co., Transportation Bn. | 4823 (Aircraft Maintenance Officer) | 4823 | --- | Identical to Primary |
| HOTEL | CPT | Company Commander, Main Sup-Support Co., Maintenance Bn. | 4815 (Mechanical Maintenance Officer) | 4200 (Supply and Service Officer) | --- | Related to Primary |
| INDIA | CPT | Company Commander | 4803 (Maintenance Officer) | 4415 (Signal Equipment Maintenance & Repair Officer) | 4419 (Quartermaster Supply Officer) | Related to Primary |
| KILO | LTC | Battalion Commander, Maintenance Bn. | 4512 (Ordnance Officer) | 4512 | --- | Identical to Primary |
| LIMA | 1LT | Company Commander, Supply Co. (RP) | 4200 (Supply & Services Officer) | 4815 (Mechanical Maintenance Officer) | --- | Related to Primary |

[a]Relationship of duty MOS to the primary or secondary MOS in all designated relationships in this report is specified depending on which of these MOSs is most similar to the duty MOS. MOS are considered to be related if there are some common areas of knowledge shared by both MOS. Determination of relationship between MOS was made from descriptions of these MOS in AR 611-101 (Manual of Commissioned Officers Military Occupational Specialties), AR 611-112 (Manual of Warrant Officers Military Occupational Specialties), and AR 611-201 (Enlisted Military Occupational Specialties), whichever was applicable.

respondents does agree with information given informally by personnel assigned to these locations. For example, it was mentioned on several occasions that officers in Vietnam usually change jobs every six months. This point was not brought out in interviews outside of Vietnam where officer personnel apparently tend to remain in their duty positions for longer periods. The tour of duty in Vietnam, Thailand, and Korea is limited to 12 months, although an 18-month tour is possible in Thailand under some conditions.

The months-on-job figures represent a rather high turnover rate. The basic mechanized stock accounting system training problems occasioned by high turnover with respect to these respondents is primarily that of training logistics, that is, getting NCR 500 training to all of these personnel in time for it to be of use. Problems associated with learning a large amount of complex material concerning the NCR did not appear to obtain for this group.

## MECHANIZED STOCK ACCOUNTING SYSTEM TRAINING

The training reported by the respondents[1] is classified in this report as formal or informal. Formal training refers to scheduled, guided, systematic instruction given in a school or classroom setting. Informal training refers to the unsystematic, non-uniform learning—sometimes self-initiated, sometimes initiated by supervisors—that takes place during a duty position assignment.

Formal, Informal, Combined Training. Ten respondents reported having had formal mechanized stock accounting system training, while six reported they had not. Of the 10, one attended U.S. Army Quartermaster School special orientation, two attended U.S. Army Ordnance Center and School special orientation, four attended the U.S. Army Computer Systems Command DSU/GSU Field Team Vietnam-Supervisor's Course, and four attended conversion briefings.[2]

The fact that 10 of the 16 officers had some formal training on the mechanized stock accounting system is somewhat deceiving. Most of this training amounted to a few hours at best. The most thorough training, two days, was received by the four officers who attended the Supervisor's Course given by the DSU/GSU Field Team, Vietnam (discontinued in December 1968). The U.S. Army Quartermaster School special orientation also appeared comprehensive involving several sessions.

The conversion briefings, although they covered the system in its totality, did not amount to more than a few hours of instruction. These briefings are only given to those personnel attached to a battalion at the time of conversion. Personnel who are subsequently assigned to the battalion do not receive this training, and there seems to be no training available for them unless they have had previous experience or training.

It should be noted that not one of the 16 officers reported receiving instruction on the mechanized stock accounting system in any regular course of instruction taken at the U.S. Army Quartermaster School, although three had taken courses at the QMS.

Ten respondents reported having had informal mechanized stock accounting system training, while six reported not having any informal training. Of the 10, four attended miscellaneous briefings and orientations; eight studied NCR 500 system manuals, SOP's, and briefing materials, while four attended demonstrations, or received instructions from personnel operating the NCR 500 system.

[1] None said that they had had experience with the NCR 500 in the field prior to their present assignment.

[2] Briefings received as part of the conversion of a manual stock accounting function to the mechanized stock accounting system.

Informal training for this group of respondents was largely self-initiated and of the do-it-yourself kind. In some cases, the instruction may have been originated by someone else but this seems to be the exception for this group.

All the 16 respondents indicated that they had had either formal (6) and/or informal (6) training, while four reported receiving both.

Training Needs. All 16 personnel responded to questions regarding mechanized stock accounting system training needs. Thirteen expressed a desire for more training in the fundamentals of the system, six expressed a need for system management training, while three wanted more training in the operation and function of the equipment and the computer programs.

There were three officers who did not express training needs: one had attended the DSU/GSU Field Team, Vietnam, Supervisors Course and did not closely supervise the system; one was the officer who had given instruction on the system; and one was an officer with considerable mechanized supply experience.

Several training methods were suggested including use of a programed text and role-playing techniques. A thorough knowledge of the software of the system, and an emphasis in training on the basic principles of supply were also mentioned as needs.

Comment. There are several lines of evidence in the respondents' account of training received which indicate that a rather high proportion of these personnel were in need of more training on the NCR 500-based mechanized stock accounting system than they had received.

First, the respondents indicated that the formal training received on the NCR 500 involved only a few hours of instruction. It is also evident that this training was not always suited to the respondent's job. A working knowledge of this system cannot be gained in a few hours, especially if the instruction is embedded with other subjects in a training course.

Second, formal instruction only reached 10 of the 16 respondents which indicates that a considerable proportion of officers in these jobs had not received NCR 500 system instruction.

Third, 10 of the officers found it necessary to initiate their own training.

Fourth, 13 of the respondents said that they needed additional training on the mechanized stock accounting system.

Fifth, comments by some of the officers indicated that they did not have an adequate grasp or appreciation of the system. For example, a battalion commander (who was also indicating his desire for a more sophisticated computer system) indicated that he frequently requested supply management information that required the mechanized stock accounting system to halt its regular operations in order to comply with the data request.

The respondents also indicated the general direction of their training needs. First, all 13 officers who expressed the need for additional training on the mechanized stock accounting system said that they wanted to know more about the fundamentals of the system, to enable them to carry out their managerial functions more effectively. By "fundamentals" they meant the components of the mechanized stock accounting system, including personnel, hardware, and software; how these components function together to produce the correct and optimum work flow; and what indicators can be used to evaluate system functioning.

A second direction that these officers felt training should take is the incorporation of more supply management information in their instruction. The comments about training needs emphasize that the relationship between the NCR 500 and the Army supply system requires that personnel who use the NCR 500 output, provide input to the system, supervise the system, or operate the equipment also need to be trained and knowledgeable in the Army repair parts supply system as well as the NCR 500.

Third, the respondents felt that the training should integrate the NCR 500 computer system and its operations with supply management and supply operations.

Fourth, the officers indicated that a wider coverage of the functions and responsibilities of the various duty positions in a DSU should be included in training as DSU efficiency would be considerably increased if personnel were more familiar with duty positions other than their own.

Training techniques or vehicles were also recommended. Some officers expressed the desire for a programed text that consolidates needed information from many sources and presents this information so that it can be found rapidly. Many indicated that their jobs did not allow them much extra time for study and that too much needed information was scattered among too many hard-to-search sources.

A second training method which was rather enthusiastically recommended was a simulated stock accounting operation in which the students learned by role playing in different duty positions.

## REPAIR PARTS SUPPLY TRAINING AND EXPERIENCE

Data from the exploratory study before this survey indicated that knowledge of the repair parts supply system is a basic and primary requirement for personnel working with the mechanized stock accounting system. For this group of officers, supply knowledge is probably more important than mechanized stock accounting system know-how.

Formal and Informal Training. Fifteen of the 16 respondents reported having had repair parts supply training; only one reported not having training. Formal training included: U.S. Army Quartermaster School Officer Course (3); U.S. Army Ordnance Center and School Officer Course (7); U.S. Army Infantry School Officer Course (1); U.S. Army Transportation School Officer Course (2); U.S. Army Signal School OCS (1); data processing course (1); correspondence course (1); field training classes, courses, and so forth (4).

Other than the Quartermaster School and Transportation School courses, school training in supply was that included in basic or career officer courses, and apparently consisted of no more than a few hours of instruction.

Five of the respondents said they had had two types of supply training, while 10 said they had had only one.

Only four of the 16 officers reported that they had studied regulations and manuals to further their supply knowledge. These four had also had some formal training in repair parts supply. Most of the other respondents implied that they learned from supply publications but did not actually so state.

Repair Parts Supply Experience. All 16 respondents reported having had repair parts supply experience. More than half (9) gave maintenance work as their previous experience. Other experience reported was: unit supply (2); property book (1); repair parts (5); warehouse (1); inventory control point (2); DSU (4); mechanized supply—other than NCR 500—(1); ammunition supply (1).

Eleven respondents said they had had only one type of prior supply work, two gave two types, one gave three, and two reported four types of supply experience.

Comment. The respondents' accounts of their supply training indicate that this training has not reached the desired level for incumbents of the duty positions concerned. The fact that 15 of the 16 officers reported that they had received formal training in supply is somewhat deceptive, for while five of the 16 officers were given repair parts supply training at service schools, 10 reported formal training that evidently consisted of only a few hours included in basic or career courses, and one officer reported no formal supply training.

It is evident that most of the required supply know-how was unsystematically obtained by the respondents in various duty positions as requirements, time, and inclination permitted. Thus, it would appear that comprehensive and systematic repair parts supply training should be available and given to a greater number of personnel in the duty positions represented by this group of respondents.

A simulated DSU as a vehicle for repair parts supply training was recommended by one officer who had been trained at the U.S. Army Transportation School with this technique.

## PROBLEMS IN MECHANIZED STOCK ACCOUNTING SYSTEMS

The respondents outlined various problems that can also be considered related to the lack of mechanized stock accounting system training of the respondents and/or other personnel who interact with, or are part of the system. These problems were mentioned by the officers in connection with their responses to questions concerned with possible problem areas such as management, warehousing, personnel, and customers.

Management. All respondents (16) reported management problems; these included coordination of the mechanized stock accounting system (8), coping with special data requirements and reports (9), and handling of heavy workload (8). All respondents reported that they experienced management problems in one or more of these categories.

This does not assure that the three categories of management problems indicated were mutually exclusive. Actually, problems of coping with special data requirements and problems connected with a heavy workload can also be classified under coordination problems as they are generated by these two conditions.

Coordination problems included: keeping system operations synchronized and moving; organizing personnel and tasks; poor coordination between the stock accounting and storage activities; and organization and coordination of document flow.

Special data requirements that took time away from normal operations included: printouts of zero balance items; lists of balance on hand for specific items; running specially written programs to abstract certain types of information from the ledgers.

Workload problems were mentioned by respondents who also indicated that they had difficulty organizing the effort of the system under these conditions. The real problems seem to be a joint function of the level of training of the managers, and the account of work imposed on the system.

A battalion executive officer, who mentioned coordination and special requirements as problems, also said he had difficulty evaluating the NCR 500 system (there was a newsletter published by the DSU/GSU Field Team, Vietnam and a handbook published by an aviation group that concerned evaluation of this computer system that should have been available to this officer).

The respondents needed training in (1) managing the system workflow (although these personnel became involved in this management aspect in varying degrees); (b) evaluation of the mechanized stock accounting system operations; and (c) knowing enough about the system to explain the capabilities and limitations to superiors who make requests (or requirements) for data that the system could not provide or could provide only with considerable difficulty and at the expense of normal operations.

Training needs of supervisors, with respect to the understanding of the capacities and limitations of the NCR 500 system, were indicated by the frequency and type of requirements for special reports or data, although it is obvious that many of

these requests did not stem from lack of knowledge about the system on the part of the supervisors, but rather from necessity. There is some tendency for personnel, who do not understand that the NCR 500 is really a bookkeeping machine rather than a computer, to believe that the system can provide much more information with much greater ease than is actually possible.

Warehousing. Twelve of the 16 respondents mentioned warehousing problems that included receiving of stock (2), location of stock (9), stock balance (2), and issuing (1). (Nine of the 13 DSUs were represented by the respondents who mentioned warehousing problems.)

Difficulties with receiving of stock included incorrect handling of documents accompanying received material, and the lack of recording of the location of newly received repair parts.

Stock location problems are those of mislocation of stock, multiple stock location, incorrect stock location files, and location of stock not recorded. A battalion commander said that a complete inventory had revealed that some of the stock in his warehouse had been on hand for 18 to 30 months. A company commander said that his biggest problem was in the warehouse, not the NCR 500. Stock balance shortcomings are basically the lack of agreement of the stock accounting records or ledgers with the actual stock on hand. Inaccurate location of stock is also a contributor to this problem.

Issuing problems were those of issuing the wrong quantity of repair parts.

Lack of organization is the basic problem in warehouse operation mentioned by most of the officers. This situation results from three interrelated problem areas:

(1) Lack of training in the repair parts supply system, the mechanized stock accounting system, and storage operations.

(2) Lack of proper assignment of personnel to the warehouse. There appears to be a prevalent notion among those who assign personnel to warehouse duty positions that these jobs require only a strong back. This is not so. Warehousemen have to be accurate in locating materiel and keeping records. These duty positions require alert, conscientious personnel, and should not be filled with personnel who are disciplinary problems. A training need for managers exists as well. Assignment of untrained personnel or personnel with behavior problems to warehouse duty positions indicates that those who assign the personnel do not understand the place of the storage activity in the logistics system.

(3) Lack of motivation. Considering that warehouse jobs are regarded as low status duty positions, and jobs that anyone can do, it is not surprising that motivation problems occur.

All of these problems interact, so system discipline suffers and logistics system efficiency is adversely affected.

DSU Personnel. All respondents (16) reported problems with DSU Personnel. Fifteen complained of the lack of training of DSU managers (technical supply officers, NCOs). Every respondent mentioned problems reflecting the need for additional training and experience for their subordinate personnel, including: lack of supply trained personnel (6); lack of storage trained personnel (4); personal turnover (4); motivation or initiative of personnel (8). The only respondent who did not mention the lack of training of the NCR 500 managers did indicate that motivation of personnel was a problem.

Technical supply officers and the NCO supervisors of this technical supply operation need further training. The need for more training was also indicated for nonsupervisory personnel in both stock accounting and storage.

There is also a need for better motivation, either throughout the DSU or with respect to personnel in some of the duty positions.

Customers. Twelve of the 16 respondents mentioned having problems with customers including: prepunched requisitions not used (4);[1] PLL's not furnished or updated (4);[2] and status not understood (5);[3] abuse of priorities (2); lack of agreement between customer and DSU records (2); lost documents (2); other problems (2).

The problems reported by the respondents indicated that supply system procedures were not being followed by a fairly substantial proportion of the DSU customers. The fact that about a third of the officers said that customers had difficulty understanding status indicates that there is a need for better customer training with respect to PLL procedures.

In some of the cases where customers did not use prepunched requisitions, it was evident that they did not have them, because (a) they had used their supply, (b) the requisitions had been lost in transit from the DSU to the unit, or (c) the DSU had not furnished the customer with prepunched requisitions.

Staffing. The 16 respondents were asked about the staffing of the mechanized stock accounting activity and the corresponding storage activity. Exploratory study data had indicated that staffing, particularly of the mechanized stock accounting system, was considered a problem.

Most of the 15 respondents (one interview terminated before staffing information could be obtained) felt that the mechanized stock accounting system in their DSU was adequately staffed. Eight indicated staffing to be adequate without reservations. Four more said staffing was adequate with certain considerations. For example, one respondent said that the correct number of personnel were assigned to his mechanized stock accounting system, but there weren't enough trained personnel on hand. Another said that his system had no trained personnel assigned but did have some NCR 500 trained enlisted personnel on loan from another DSU. Another officer pointed out that the required number of stock accounting personnel were assigned but that there was no NCR maintenance man attached to the unit.

Most of the 14 respondents[4] tended to feel that the storage activity, like the stock control operations, was adequately staffed, although six respondents felt the staffing was adequate with the provision that the military complements were supplemented by American civilians in one case, and by local national civilians in five cases. One officer said that his warehouse was staffed in terms of the TO&E but understaffed with regard to the amount of work to be done. Two said they simply needed more personnel.

The need of training for their subordinate personnel reported by these respondents indicated that the respondents feel that their DSUs were not adequately staffed with trained personnel, particularly supervisors.

[1] Each customer (or unit such as a company or battalion) supported by a mechanized DSU is furnished prepunched-preprinted requisition forms (in the form of punched cards) for all repair part items on the unit's PLL. The customer only adds three items of information to the card in requisitioning a part.

[2] Supported units are required to furnish their supporting DSU with a copy of their PLL and to keep the PLL updated with their DSU as changes occur.

[3] Status cards are furnished customers when requisitions cannot be filled or can only be filled in part. The card indicates, by a letter and number code, the status of the requisition, e.g., whether the parts have been back-ordered, or the requisition has been sent to a higher supply source, such as a depot.

[4] Two interviews in the group of 16 terminated before staffing information could be obtained.

## ATTITUDES TOWARD THE MECHANIZED STOCK ACCOUNTING SYSTEM

The Exploratory Study information had indicated differences in the attitudes of certain classes of personnel concerned with the NCR 500. In the case of some categories of managers, particularly in the field grade officers and warrant officers, there was indication that the attitudes were somewhat negative. Attitudes of this sort might have implications to the kind of support an NCR 500 system might get. The Exploratory Study data also indicated that the attitudes of company grade officers might be somewhat more favorable to the NCR 500 than those of field grade officers. The attitude data were thus categorized by field grade and company grade officers. Of the 16 manager-type respondents, there were nine field grade, one was a warrant officer, and seven were company grade.

Efficiency. The three field grade and two company grade officers who said that the NCR 500 system was efficient gave speed, accuracy and the ability of the system to handle large workloads as their reasons.

Negative comments made about the NCR 500 system emphasized such factors as slowness, lack of flexibility, and perpetuation of error. Most of the respondents had both positive and negative comments to make about the system, most of which amounted to: "It's an efficient system if used properly."

Comparison of the Mechanized With the Manual System. Six field grade and six company grade officers said the mechanized system was more efficient than the manual system. The 12 respondents (four made no comment) said, essentially, that compared to the manual system, the mechanized system was faster, more accurate, required fewer personnel, and could handle a heavier workload.

One officer, a battalion commander, who previously had said that the mechanized stock accounting system was generally inefficient, also said that it was less efficient than the manual system. The officer had received a special orientation at a CONUS school on the NCR 500, and his complaint was about information that he wanted and could not easily obtain from the mechanized system.

Manual System Advantages. Six respondents felt that the manual system had certain advantages over the mechanized stock accounting system. They commented that data are more accessible, there is no equipment to break down, and errors are not perpetuated as they are in the mechanized system.

Mechanized System Publications. Of eight respondents (five made no comment; three interviews were curtailed) four felt that the publications were easy to use, one that they were not easy, and three that there were both easy and difficult features.

Four publications that concern procedures, maintenance, and the management of the mechanized stock accounting system for system operators and managers have been published by the U.S. Army Computer Systems Command. Most of the comments about ease of use of those manuals pointed out that they were very clear and specific.

Negative comments emphasized the desire for different organization of some of the manuals, more on management, and so forth. Three of the four respondents who made negative comments about the mechanized stock accounting system manuals also reported that they were easy to use. The fourth officer who made critical comments about the publications said he had had prior experience with computer systems as well as several courses in data processing and computers. He was rather critical of the entire mechanized stock accounting system, but did say it was more efficient than the manual system.

Not one of the three officers who said that the mechanized system was slow or inefficient made any comment about the mechanized stock accounting system publications. Four respondents reported that the publications for their mechanized units were up to date.

Comment. The number of respondents was small (16), and the degree to which this group of officers was representative of the population of battalion management personnel is unknown. Nevertheless, these data indicate that the attitudes toward the mechanized stock accounting system of field grade officers does not differ essentially from those of company grade officers.

There are two types of evidence from these data that indicate that more mechanized stock accounting system training would be worthwhile for officers in the duty positions represented by this group of respondents. First, several of the suggested comments about the system, including the equipment, indicate that the officers who made them did not understand the system or its purpose. These comments also indicated a desire for a more sophisticated computer system with greater capability for producing various kinds of supply management data. Desire for a more sophisticated computer system does not necessarily imply lack of knowledge about the NCR 500 system, of course.

Second, some of the respondents indicated that there were other officers in supply management duty positions who avoided the NCR 500 and its output because they did not understand it.

## USE OF INSPECTION CHECKLIST

One of the problems expressed by personnel interviewed in the Exploratory Study was the lack of management indicators that could be used to determine whether the mechanized stock accounting system was functioning properly.

This problem has been known by the U.S. Army Computer System Command for some time. Accordingly the USACSC developed an inspection checklist that has been incorporated in newsletters and was available for use by mechanized stock accounting system managers for several months prior to the time interviews for this research took place. The DSU/GSU Field Teams have published this checklist and have encouraged its use at the DSU level as a management tool. The respondents were asked if they used this checklist; only three of the 16 said they did, while 10 said they did not. One of the 10, a battalion maintenance officer, said that he had used the CSC inspection checklist in his previous job but not in his present one. Two respondents reported they had not heard of the checklist, while another knew about the CSC checklist but used one of his own. Three did not comment on the list.

When asked about their inspection of the mechanized stock accounting system, five of the 11 respondents[1] said they only inspected one aspect of the system. Six officers reported inspecting more than one aspect such as program schedules and ledgers. The most frequent inspection of the system had to do with cleanliness and neatness. While it does not require much knowledge of the mechanized stock accounting system to make this inspection, it is a rapid technique for a busy and/or untrained manager.

## CONTACT WITH THE COMPUTER SYSTEMS COMMAND DSU/GSU FIELD TEAMS

All 16 respondents reported they had had contact with the DSU/GSU field teams prior to the time of the author's visit.

The mission of the Computer Systems Command includes the provision of assistance to major Army commands in installations, operation, and maintenance of multicommand

[1] Of the group of 16, five did not report.

ADP systems. The CSC DSU/GSU Field Teams participate in the performance of this function. Their assistance, by its very nature, is a training vehicle, functioning concomitantly with the other aspects of the field team mission. This assistance turns out to be repair parts supply system training as well as computer system training because of the integrated nature of the two systems in the mechanized stock accounting system operation. The CSC DSU/GSU Field Team assistance is, therefore, considered as training for the purpose of this report.

All of the 16 respondents reported that the CSC DSU/GSU field teams had provided some kind of assistance including inspection and/or evaluation (12); maintenance (7); system procedures (9); training (1) and conversion (manual to NCR 500 system) (3). Eleven respondents said that they had received two or more kinds of assistance.

Thirteen of the respondents said that they were satisfied with the assistance their NCR 500 systems were getting from the DSU/GSU Field Teams and that these teams were providing valuable assistance and should remain on the job.

Comment. A high proportion of the respondents felt that the DSU/GSU Field Teams were providing a very valuable service. It is evident that the main value of this service was in the form of assistance with the management of the mechanized stock accounting systems and that the field teams provided this assistance in the surrogate sense for the first-line managers and/or provided management assistance to the technical supply officers and the NCO supervisors.

The fact that a high proportion of these respondents felt the teams provided a valuable service is another indication that more mechanized stock accounting system training is in order for both the respondents and their subordinates.

## Chapter 3

# TECHNICAL SUPPLY OFFICERS

## JOB DESCRIPTION

The Technical Supply Officer (TSO) is normally in command of the supply platoon in the main support company of a maintenance battalion not attached to a division, or of the supply platoon of the headquarters and main support company of a maintenance battalion attached to a division.

The supply platoon is the DSU and includes both the storage activity or warehouse, and the stock accounting activity that keeps account of the repair parts that are received, stored, and issued by the storage activity. Thus, the TSO is required to be knowledgeable about stock accounting procedures as well as those procedures and techniques that are germane to the storage activity. At DSUs that have an NCR 500 system, the TSO is also required to be knowledgeable about that system's procedures and equipment. The Technical Supply Officer has an important job. Maintenance depends on the availability of repair parts which in turn depends on a smooth flow of these parts in and out of support activities.

The Technical Supply Officer is usually a lieutenant serving in one of his first duty positions, and is frequently an ordnance officer, though TSOs with other branch affiliations are common.

Ten technical supply officers, all from different DSUs, were interviewed. The Officer-in-Charge of a Supply Point was interviewed using the same set of questions that were used for TSOs, as his job appeared to be more like that of a TSO than any other duty position in the survey. One Technical Supply Officer was attached to a general support unit, the nine remaining TSOs were attached to direct support units.

Not all of the technical supply officers interviewed had equal supervisory responsibility or involvement with the supervision of the NCR 500 system in their direct support activity. In one case the supervision of the mechanized stock accounting system was primarily carried out by a battalion staff officer (the battalion technical supply officer), the TSO centering his activities on the storage operation. In two other cases, the actual supervision was rather obviously effected by a knowledgeable NCO in the Stock Control Supervisor's duty position. Another TSO, experienced as a TSO of another DSU having an NCR 500 and having only a month of Army service remaining, was temporarily assigned as a replacement for a TSO who had been injured.

Table 4 lists technical supply officers by DSU, rank, duty MOS, primary and secondary MOS (where available), and relationship between duty MOS and primary or secondary MOS.

Assignment of Personnel. One respondent said his primary MOS and duty MOS were identical, while another said his secondary and duty MOSs were identical; five reported their primary MOS and duty MOS were related, while one said his secondary and duty MOS were related; two reported no relationship between primary MOS and duty MOS. (One respondent's MOS relationships were not ascertained.)

The relationship between duty and primary or secondary MOS for the Technical Supply Officer does not seem to be quite as close as that found in the case of the battalion management personnel. Half of the battalion managers were in duty positions

Table 4

**Technical Supply Officers: Relationship Between Duty, Primary, Secondary MOSs**

| DSU | Rank | Duty MOS | Primary MOS | Secondary MOS | Relation of Duty MOS to Primary or Secondary MOS |
|---|---|---|---|---|---|
| CHARLEY | 1LT | 2162 (Operations & Training Staff Officer - G3, S3) | 0215 (Basic Signal Officer) | -- | Not related |
| DELTA | 1LT | 4219[a] | 4200 (Supply & Service Officer) | 4219[a] | Not ascertained |
| ECHO | 1LT | 4200 (Supply & Service Officer) | 4815 (Mechanical Maintenance Officer) | -- | Related to Primary |
| FOXTROT | 1LT | 4201 (Supply Management Officer) | 1723 (Nuclear Weapons Officer) | 4815 (Mechanical Maintenance Officer) | Related to Secondary |
| GOLF | CAPT | 4823 (Aircraft Maintenance Officer) | 1980 (Fixed Wing Aviator) | -- | Not related |
| HOTEL | 1LT | 4200 (Supply & Service Officer) | 4201 (Supply Management Officer) | -- | Related to Primary |
| INDIA | CW2 | 761A (Unit Supply Technician) | 286A (Communications-Electronics Repair Technician) | -- | Related to Primary |
| JULIET | CAPT | 4802 (Ord. Guided Missile Officer | 4516 (Missile Maintenance Officer) | -- | Related to Primary |
| KILO | 1LT | 4201 (Supply Management Officer) | 4201 | -- | Identical to Primary |
| LIMA | 1LT | 4200 (Supply & Service Officer) | 4815 (Mechanical Maintenance Officer) | -- | Related to Primary |
| MIKE | 1LT | 4000 (General Supply Officer) | 2136 (Nontactical Unit Officer) | 4000 | Identical to Secondary |

[a]Not a valid MOS number; respondent may have meant 4419, Quartermaster Supply Officer, now converted to 4200 or 4201.

having an MOS that was identical to either their primary or secondary MOS. In the case of the TSOs less than a fifth did. This difference could be due to the fact that the TSO duty p sition covers a narrower, more specific set of activities than the higher level battalion management jobs.

Job Turnover. The amount of time in the duty position held by the respondent at the time of interview was used as an indication of job turnover for the technical supply officers.

Number of months respondents reported having been on the job in Vietnam ranged from one to 12; Thailand one to five; Korea three to six; the one respondent in Okinawa had been on the job 10 months. The average was 4.9 months.

The number of respondents was too small to compare meaningfully the number of months on the job by location. These data, though of unknown representativeness, do agree with statements made by personnel in the exploratory study who said that officers remained in the TSO duty position for comparatively short periods of time.

Considering the training and experience that the TSO usually brings to his job, together with his short job tenure, it appears that this important duty position is almost continuously filled by an underqualified officer.

## MECHANIZED STOCK ACCOUNTING SYSTEM TRAINING

### FORMAL, INFORMAL, AND COMBINED TRAINING

One officer reported two sources of training: (1) the Supply Management Officer Course at the U.S. Army Quartermaster School; and (2) instruction by the DSU/GSU Field Team, Vietnam, in the Supervisor's Course. The remaining respondents who reported formal training indicated only one source: U.S. Army Ordnance Center and School, OCS (3); DSU/GSU Field Team, Vietnam, Supervisors Course (2); conversion briefings (2). Three TSOs said they had not had formal training on the mechanized system, and one of them said he had never even heard of the NCR 500 before he reported to his unit.

Most of the training reported by the TSOs was little more than a few hours orientation. The conversion briefings and classes also amounted to just a few hours. The two-day Supervisor's Course given by the DSU/GSU Field Team, Vietnam, comprised the most extensive training received by the TSOs.

All of the 11 respondents reported that they had studied manuals and other documents.[1] Nine said that they had received some information from personnel who were operating the NCR 500 system. Two officers did not report demonstrations as a source of training, but it is probable that they did obtain some NCR 500 information this way. All 11 respondents reported having used mechanized stock accounting system manuals,[2] SOPs, and briefing materials, and six reported using newsletters.

[1] These data only refer to statements by the respondents that they studied the mechanized stock accounting system manuals with the intent of learning about the system. The manuals were also used as aids for job performance, though there is no doubt that both ends were simultaneously served by such study. The major point is that the respondents felt it necessary to increase their knowledge in this way.

[2] The current versions of the materials used at that time are the following: *Logistics Management Mechanized Stock Control and Supply Accounting System (Magnetic Ledger) Stock Control and Supply Accounting System (Magnetic Ledger) Operator's Manual* (ST 38-10-711-2, 1 Nov 68); *Logistical Management Mechanized Stock Accounting Records System (Magnetic Ledger) and Procedures for Conversion of Manual Records* (ST 38-10-711-3, 15 Feb 72); all, Computer Systems Command, Fort Belvoir, Virginia.

Despite the rather obvious management and training value inherent in the CSC Inspection Checklist, only four of the 11 TSOs reported that they had used it as an inspection aid.

The important point is that all of the respondents reported feeling the necessity to initiate some training for themselves. This does not seem surprising in view of the complexity of the mechanized stock accounting system and the brief orientation to this system that the officers had. The informal training in this case does not appear to be just the usual learning-on-the-job that people achieve through normal job activities; rather it can be considered as self-initiated learning by people who obviously feel inadequate in their duty positions.

No respondents reported having formal training only, while three reported having informal training only. Eight respondents reported having had both formal and informal training.

Of the 11 respondents, nine expressed a need for further training in the mechanized system. More information about the fundamentals of the system—its operations, limitations, and capabilities was a need expressed by nine officers; operation and function of the equipment and the computer programs (7), and management of the system (8).

Two officers did not express training needs. Both had attended the DSU/GSU Field Team Supervisor's Course. One of these respondents had also completed the Supply Management Officer's Course at the U.S. Army Quartermaster School and had served as an assistant TSO at another DSU having an NCR 500 system. The other TSO was rather new in his job and may not have had an appreciation of his training requirements, although he appeared to have a reasonably good grasp of the various aspects of his job.

## MECHANIZED SYSTEM EXPERIENCE

Three of the 11 respondents reported experience with the NCR 500 system prior to their assignment at the time of interview. Two of these officers had been technical supply officers for a few months at other DSUs having the NCR 500. The other had been an assistant technical supply officer at another DSU for four months.

The two respondents who had previously been technical supply officers indicated the need for more training on the NCR 500 system. One said he wanted to know more about the fundamentals of the system, the operation and function of the programs and the equipment, and management of the system. The other indicated a need for more knowledge about the operation and functions of the equipment and the programs, and system management.

The officer who had formerly been an assistant TSO did not indicate the need for more training, apparently feeling that his training and experience had given him the required expertise. It should be noted that his company commander had formerly given instruction on the mechanized stock accounting system at the U.S. Army Ordnance Center and School.

Comment. The same types of evidence that indicated that the battalion management personnel needed more training on the mechanized stock accounting system indicated the need for additional training for the technical supply officers as well.

The respondents indicated the general direction of what they considered to be their training needs. First, all of the TSOs who expressed the need for additional training indicated the need to know more about the fundamentals of the system, the components of the system, and relationship between the components. As in the case of the battalion management personnel, the implication was rather clear that this training was needed in order to help the TSOs manage the system more effectively. These officers laid heavier stress on their training needs with respect to the operation and function of the NCR 500

system equipment and programs, and on management training needs, than the battalion managers. This is understandable as the TSO is a first-line manager.

Unlike the battalion managers, the TSOs did not specifically mention the need for repair parts supply training and information to be integrated in the mechanized stock accounting system training. The need for this training integration, while not overtly stated, was implied in some of the comments made by the respondents about their mechanized system training needs and management problems. The interview data do not clearly establish a training need of this nature, however. It is possible that the battalion managers, with somewhat more repair parts supply experience, held a wider perspective of training requirements than the TSOs who were less experienced.

## TRAINING IN REPAIR PARTS SUPPLY

Ten of the 11 respondents reported having had formal training in repair parts supply as follows: U.S. Army Quartermaster School—OCS (1), Supply Management Officer Course (2); U.S. Army Ordnance Center and School—OCS (3), Basic Course (2), Mechanical Maintenance Officer Course (1); U.S. Army Transportation School—Basic Course (1), Aircraft Maintenance Officer Course (1); U.S. Army Signal School—Basic Course (1); U.S. Army Munitions Center and School—Missile Maintenance Officer Course (1); enlisted courses (schools not ascertained) (1); field training (1).

With the exception of the Quartermaster School courses, the repair parts supply training received by the respondents was usually a part of other courses and involved only a few hours.

All of the respondents reported some formal training in repair parts supply except the Warrant Officer whose training was primarily in communications and electronics.

Repair Parts Supply Experience. Six of the 11 officers reported repair parts supply experience in jobs held prior to their duty position at the time of interview. Three of these officers had been technical supply officers or assistant technical supply officers of other DSUs having NCR 500 units. Three other respondents reported prior repair parts supply experience. One was a former enlisted man with maintenance experience but no supply experience. One had worked in a depot warehouse for four months. The third had been in a technical supply duty position in a forward supply company for a few months.

The TSOs description of their training in repair parts supply indicates that additional training is necessary for incumbents of these jobs. The fact that 10 of the 11 respondents received formal training in repair parts supply is deceptive. With the exception of two TSOs who had completed the Supply Management Officers Course at the U.S. Army Quartermaster School, the formal supply training reported by the other eight TSOs evidently consisted of only a few hours included as part of other courses.

As in the case of the battalion management personnel, it is evident that most of the supply knowledge gained by the TSOs was obtained unsystematically on the job as certain requirements arose.

## PROBLEMS IN MECHANIZED STOCK ACCOUNTING

The problems indicated by the respondents could be considered as being related to the lack of NCR 500 training. The problems have been categorized under the following headings: management, warehousing, training, experience of subordinate personnel, and customers.

Management. Ten of the 11 respondents reported having management problems. All 10 reported problems with coordination of the mechanized system, six said they had

difficulty coping with special data requirements and reports, and six reported problems with a heavy workload.

The only officer who did not express management problems was comparatively new at his job as Officer in Charge of a Supply Point and had had no formal training on the NCR 500 system.

Coordination problems reported had to do with keeping system operations synchronized and moving; organizing personnel and tasks; poor coordination between stock accounting and storage activities; and organization and coordination of the flow of documents.

The special data requirements or reports that took up time usually concerned with regular operations were the same type that management personnel had indicated: printouts of zero balance items; lists of balance on hand for specific items, and so forth.

Many of these management problems appeared to be the result of an interaction between two major factors: (a) the lack of training of the personnel involved in the functions and operation of the NCR 500 systems; (b) workload requirements that were in fact demanding.

The management problems indicated by the TSOs were essentially the same as those experienced by the battalion management personnel. The problems indicated previously centered about management of the system workflow, sometimes under heavy workload conditions.

Management problem data indicate the need for additional training at three levels: the TSOs' superiors in the battalion and management levels above its maintenance battalion; the TSOs themselves; and the TSOs' subordinate personnel.

Training needs for superiors (and technical supply officers as well) were indicated by the fact that about half of the TSOs felt that personnel at higher management levels imposed many special requirements for data on the NCR 500 system that they would not require if they understood the capacities, limitations, and content of the mechanized stock accounting system.

Training needs for the TSOs were indicated by the fact that 10 of 11 respondents said that they had problems coordinating various functions and operations of the system.

Training needs for subordinates were indicated by the difficulties mentioned by the TSOs in coordinating the mechanized stock accounting system.

Warehousing. Eight of the 11 respondents reported warehousing problems: location of stock (6); stock balance (4); and issuing (1). Three TSOs gave the same two problems: location of stock, and stock balance. Five officers each noted one warehousing problem.

Three respondents did not mention warehousing problems. One of them was in charge of a well-operated, well-staffed warehouse that had been established for some time, and was engaged in missile support in a non-combat zone. Another had a warehouse that was operated by an American civilian contractor. The third TSO did not appear to be closely involved with the supervision of the warehouse.

The same stock location problems were mentioned by the technical supply officers that were noted by the management personnel: stock mislocated, multiple stock locations, stock location not recorded, and incorrect stock locator files. Stock balance problems were essentially the lack of agreement between the stock accounting records and the actual stock on hand.

The same basic warehousing problem—lack of organization—mentioned by the battalion managers was also indicated by the TSOs. Also, as in the case of the higher level managers, about three-fourths of the TSOs pointed out these difficulties.

Judging from the TSO response data, the same interacting factors underline this disorganized warehouse condition: lack of training, inappropriate assignment, and low motivation.

Essentially the problem with personnel turnover was expressed as the loss of key supervisors who had been on the job for several months and were performing satisfactorily.

Motivation or initiative of personnel was only mentioned by two of the 11 TSOs whereas half of the 16 management personnel mentioned this as a problem. This seems somewhat odd since the TSO is presumably closer to the DSU personnel than the battalion staff officers. On the other hand, the TSOs, being comparatively new in the Army for the most part, may not have had the same sensitivity to initiative in an Army setting as the more senior officers.

DSU Personnel. Ten of the 11 respondents reported problems with DSU personnel including: lack of NCR 500 system training of the DSU NCO managers—platoon sergeants (NCOIC) (7); storage activity supervisor (6); stock account supervisor (1); lack of personnel trained in supply (6); lack of personnel trained in storage (6); personnel turnover (4); motivation or initiative of personnel (2).

The TSO interview data indicated that further training in the mechanized stock accounting system and/or repair parts supply is needed by supervisory and non-supervisory personnel in the DSU. Although there were exceptions, the stock accounting supervisory and non-supervisory personnel did not appear to present a serious training problem as far as the TSOs were concerned. Most of these personnel had received formal mechanized stock accounting system training and/or had work experience in their jobs.

Customers. Ten of the 11 respondents mentioned having problems with customers that included: prepunched requisitions not used (4); PLLs not provided or updated (5); status not understood (4); prepunched requisitions received in damaged state (3); incorrect requisitions (1); abuse of priorities (2); lack of agreement between customer records and DSU records (2); PLL clerk not trained (3); lost documents (2); customer complaints: requisitions not filled (3); other problems (2).

The one TSO who did not mention difficulties with customers was serving in a general support unit whose customers were DSUs.

The technical supply officers mentioned the same type of problems with customers as did the battalion management personnel. The types of problems most frequently mentioned were also the same. Because the TSOs have more contact with customers than the battalion management personnel, they encountered problems more frequently.

Other less frequently mentioned difficulties with customers were communication with customers, and failure of customers to carry out reconciliations.

Problems with customers reported by the TSOs were essentially the same as those reported by the battalion management personnel. The data indicated that a considerable number of customers were not following supply system procedures as closely as supply system discipline and efficiency would dictate.

This situation can be ascribed to the need for the training of customers in PLL procedures and possibly to the lack of willingness to follow supply procedures as well.

Staffing. Eight of the 11 technical supply officers felt that their NCR 500 systems were adequately staffed although two of them said that the staffing was adequate given the augmentation of local national personnel. (The author noticed that all of the 13 support units visited employed local national personnel in the stock accounting function.)

Three TSOs said that their mechanized stock accounting systems were understaffed with respect to certain conditions: lack of well-trained supervisors, lack of trained personnel, and the fact that specialists instead of NCOs were in supervisory positions. One DSU had no personnel trained on the mechanized stock accounting system at the Quartermaster School, although the required number of personnel were attached to the unit. This was the only DSU that did not have personnel assigned that had been trained

on the mechanized stock accounting system at the QMS or elsewhere. The other 12 DSUs had trained personnel.

Of the eight technical supply officers who felt that the storage activity was adequately staffed, five specified that the warehouse was adequately staffed if the augmentation by local national personnel was considered. Two officers said that the storage activity in their DSUs was understaffed because of a heavy workload and/or because of many extra duties, such as guard and KP, that are required of the warehouse personnel.

For the TSOs, staffing in terms of the required number of personnel in either the stock accounting or the storage activities did not present a problem. Other interview data indicate that the TSOs did feel that they were understaffed with adequately trained subordinate personnel, particularly in the storage activities, and at the platoon sergeant level with respect to the NCR 500 primarily.

## ATTITUDES TOWARD MECHANIZED STOCK ACCOUNTING SYSTEM

Two respondents, out of nine making comments, said that the mechanized system was efficient, and they indicated speed, accuracy, and the ability of the system to handle large workloads as their reasons. One TSO indicated that the system was inefficient since it could not handle a large workload. In his case the workload was temporarily abnormally heavy as his DSU was taking over a warehouse full of equipment that had been operated by a civilian contractor.

Six TSOs said the system has both efficient and inefficient features. Comments that were critical of the NCR 500 system noted that it required a considerable number of manual operations and that system functions tended to come to a halt when the equipment was inoperable.

Comparison of the Mechanized and Manual Systems. Nine technical supply officers said that the mechanized system was more efficient than the manual system. These respondents had previously said: the mechanized system was generally efficient (1); the mechanized system was generally inefficient (1); the mechanized system had both efficient and inefficient features (5); and made no comment about the general efficiency of the mechanized system (2).

Two TSOs did not make the comparison between the mechanized and the manual systems, reporting that they were not familiar enough with the manual system to make a comparison.

The technical supply officers who felt that the mechanized system was more efficient than the manual gave as their reasons that it was faster, more accurate, required fewer personnel, and could handle a heavier workload.

Only three technical supply officers said that the manual system had certain advantages over the NCR 500 system. One said that the data were more accessible under the manual system and that there was no equipment to break down. The other two TSOs felt that work backlog was easier to handle with the manual system. However, all three officers said that the NCR 500 was more efficient than the manual system.

Comments on Mechanized System Publications. Five of nine respondents (two had no comment) thought the mechanized stock accounting system publications were easy to use; one felt they were not easy; three felt they had both easy and difficult features.

Most of the comments by the TSOs concerning ease of use of mechanized stock accounting system publications emphasized that these documents had the characteristics of being easy to follow and explicit, and having information that is easy to find. The critical comments concerned the manner in which the publications were organized.

The attitudes expressed by the TSOs indicate that they feel the mechanized stock accounting system is generally efficient, and that it is more efficient than the manual system.

The TSOs expressed the same attitudes about the system as the battalion management personnel and in roughly the same proportion.

Most of the technical supply officers appeared to feel somewhat positively about the mechanized stock accounting system publications, indicating that these publications were comparatively easy to use.

Career Intentions. Eight of the 11 respondents said that they were not going to remain in the Army after completion of their current tour of obligated service. Two said that they had not decided whether they would remain in the Army or not, while only one said that he was going to remain in.

## CONTACT WITH THE COMPUTER SYSTEMS COMMAND DSU/GSU FIELD TEAMS

All 11 officers reported that they had had contact with the DSU/GSU Field teams prior to the time of the author's visit. The type of assistance received included: inspection and evaluation (9); maintenance (8); system procedures (7); training (2); conversion (manual to NCR 500 system) (3).

All of the technical supply officers said that the CSC DSU/GSU Field Teams had provided two or more of the categories of assistance listed above. One TSO reported assistance in five categories, another gave four, and two other respondents mentioned three kinds of assistance.

Ten of the officers reported that they were satisfied with the assistance their NCR 500 system had received from the DSU/GSU Field Team and that the teams were providing valuable help. One TSO indicated that he was dissatisfied with the help his NCR system had received in the process of converting from the manual system to the NCR 500.

As in the case of battalion management personnel, it is apparent that DSU/GSU Field Team assistance is considered valuable by the TSOs because help provided is in the form of assistance with the management of the mechanized stock accounting system.

This attitude is a further indication that more TSO training in the management of the mechanized system is needed.

Chapter 4

# PLATOON SERGEANT
## (Noncommissioned Officer in Charge)

## JOB DESCRIPTION

The Platoon Sergeant, also known as the Noncommissioned Officer in Charge (NCOIC), is typically the highest ranking NCO in the supply platoon. He is the main assistant of the Technical Supply Officer, and handles the supervision and administration of the platoon in the absence of the TSO. The platoon sergeant usually has a grade of E-7, being an NCO rather than a specialist.

The nature of the platoon sergeant's job requires that he be knowledgeable about stock accounting and storage procedures and operations. Where the stock accounting function is carried out by means of the NCR 500, the platoon sergeant must also be knowledgeable about this system. The mechanized stock accounting system knowledge requirements for the platoon sergeant are approximately the same as those for the Technical Supply Officer.

## GROUP COMPOSITION

Six platoon sergeants were interviewed. One said he was an assistant platoon sergeant, but it was evident from the job description he gave that he performed all of the duties of the platoon sergeant. Another respondent was rather difficult to classify because of the unusual structure of responsibilities in his DSU.

Table 5 lists the six platoon sergeants by DSU, rank, duty MOS, primary and secondary MOS (where available), and relationship between duty MOS and primary or secondary MOS.

Assignment of Personnel. Of the six platoon sergeants interviewed, four reported duty and primary MOSs that were identical, and two gave duty and primary MOS that were related. Two said there was no relationship between their duty and primary MOS. One of these NCOs had the NCR 500 qualification designation (G3) added to his MOS, that is 76P20G3.

It appears that these personnel had been assigned to duty positions that were reasonably consistent with their MOS. When these data were collected, it was unlikely that there were enough personnel in the Army qualified for the platoon sergeant duty position, who were also qualified as a supervisor for the mechanized stock accounting system, available for assignment to DSUs having mechanized systems.

Job Turnover. Job turnover seems to be somewhat different for enlisted personnel than for commissioned officers. Generally, enlisted personnel tend to spend their entire period of assignment in the Far East in the same job, whereas commissioned officers, particularly in Vietnam, tend to change to jobs that are quite different at least once during their Far Eastern assignments.

The months on the job for the six respondents were: 8, 3½, 2, 5, 2, and 11, with an average of 5.3. Since the number of platoon sergeants was small, no breakdown by area is given as it would be almost meaningless.

Table 5

**Platoon Sergeants: Relationship Between Duty MOS and Primary or Secondary MOS**

| DSU | Rank | Duty MOS | Primary MOS | Secondary MOS | Relation of Duty MOS to Primary or Secondary MOS |
|---|---|---|---|---|---|
| ALPHA | E-5 SGT | 76P40 (Stock Control & Accounting Specialist) | 76P20G3 (Stock Control & Accounting Specialist - NCR 500 Qualified) | -- | Related to Primary |
| DELTA | E-6 Staff SGT | 76P40 (Stock Control & Accounting Specialist) | 76P40 | 76Q40 (Special Purpose Equipment Repair Parts Spec.) | Identical to Primary |
| ECHO | E-6 Staff SGT | 76P40 (Stock Control & Accounting Specialist) | 76P40 | 76V40 (Equipment Storage Specialist) | Identical to Primary |
| HOTEL | E-6 Staff SGT | 76P40 (Stock Control & Accounting Specialist) | 76P40 | -- | Identical to Primary |
| INDIA | E-7 SFC | 76P40 (Stock Control & Accounting Specialist) | 76P40 | -- | Identical to Primary |
| JULIET | E-5 Sp/5 | 76R20 (Missile Repair Parts Specialist) | 76P20 (Stock Control & Accounting Specialist) | 76Q20 (Special Purpose Equipment Repair Parts Specialist) | Related to Primary |

As enlisted personnel tend to remain on their jobs for their entire tour in the Far East, the average time on this job for these respondents may be somewhat lower than the average for enlisted men.

## MECHANIZED STOCK ACCOUNTING SYSTEM TRAINING

### FORMAL, INFORMAL, AND COMBINED TRAINING

Formal mechanized training reported was: U.S. Army Quartermaster School, mechanized stock accounting system training (2); DSU/GSU Field Team, Vietnam, Supervisor's Course (1). Three sergeants reported that they had not received any formal training. None of the three respondents who had formal training reported having more than one kind.

The NCR 500 training received by two of the respondents at the U.S. Army Quartermaster School was the regular three-week and three-day period of instruction given to enlisted personnel assigned to mechanized system training immediately following completion of the Stock Control and Accounting Specialist Course.

Five respondents reported having informal training that included: miscellaneous briefings, orientations, (1); mechanized stock accounting system manuals, SOPs, briefing materials (3); demonstrations, instruction from personnel operating the mechanized system (4). Only one NCOIC reported having no informal training.

The one respondent who did not indicate that he had taken informal training had been through the DSU/GSU Field Team Supervisor's Course and was the respondent whose job position was difficult to classify. He was attached to a DSU having a duty configuration somewhat at variance with that usually found in a mechanized stock accounting system.

Two NCOs reported that they had studied mechanized stock accounting system manuals as well as having learned from personnel operating the system.[1]

An attitude that was implicit in several interviews with management personnel, both officer and enlisted, was that both types of managers appeared to feel that they were unable to supervise as effectively as they would have liked because of their lack of knowledge about the mechanized system, and because their subordinates knew more about the system than they did.

One respondent reported having had formal training only, and one informal training only. Two NCOIC reported having had both informal and formal training.

### MECHANIZED SYSTEM NEEDS

Only two of the six respondents said they had need for training on the mechanized stock accounting system.[2] One of these said he wanted to know more about the fundamentals of the system as well as the operation of the equipment. This was the NCO

[1] These data only refer to statements by these respondents that they studied the mechanized stock accounting system manuals with the intent of learning about the system. The use of these manuals as aids for the job performance is covered in a later section, though there is no doubt that both ends were simultaneously served by such study. The major point is that the respondents felt it necessary to increase their knowledge in this way.

[2] All of these NCOs were going to leave the Army at the end of their enlistment. The fact that only two platoon sergeants expressed training needs may have been related to the departure intentions of these NCOs.

who was difficult to classify and whose job position was such that his knowledge requirements of the NCR 500 system were actually less than any of the other platoon sergeants. The other NCO expressed only the need for more training on the fundamentals of the system.

Both respondents who identified training needs had had formal training, one at the U.S. Army Quartermaster School, the other by the DSU/GSU Field Team Supervisor's Course.

Four respondents did not report training needs. All said they had taken informal training on the NCR 500 system. One had completed the mechanized stock accounting course given by the QMS. The other three did not report formal training. All four said they had taken informal training on the mechanized system. Two of these NCOs had been working with the NCR 500 for some time and appeared rather knowledgeable about the system. The other two NCOs appeared to spend most of their time with warehouse operations. One may have been avoiding contact with a system with which he was not familiar. The other apparently spent most of his time with the warehouse operation because his presence there was needed more than it was in the stock control activity.

Mechanized System Experience. Two of the six respondents reported experience with the NCR 500 prior to the duty positions held at the time of interview. One of these, who had been trained on the mechanized stock accounting system at the U.S. Army Quartermaster School, had had experience as an NCR 500 equipment operator and as a stock control supervisor in the same DSU in which he was serving. The other platoon sergeant, who had been trained on the NCR 500 at the U.S. Army Quartermaster School, had spent two years as a member of the DSU/GSU Acceptance Team, a Computer Systems Command unit that tests NCR 500 systems before they are accepted by the Army.

The evidence in these data indicate the need for more of the NCO personnel to receive training on the mechanized stock accounting system.

## TRAINING IN REPAIR PARTS SUPPLY

Formal repair parts supply training reported was: U.S. Army Quartermaster School Stock Control and Accounting Course (2), Stock Control Supervisor's Course (1), and General Supply School (1). Two NCOs reported that they did not have any training.

Two platoon sergeants said the only supply training they had was OJT. One respondent felt that supply training courses were not as thorough as they should be.

All of the respondents reported using the supply regulations on their jobs.

Repair Parts Supply Experience. Five respondents reported having had repair parts supply experience including: unit supply (1), repair parts (2), warehouse (4), DSU (1), depot (2), and mechanized supply (other than NCR 500) (2). One reported no previous experience. Two respondents reported having experience in three categories, two in two categories, and one in one category.

Training in repair parts supply does not appear to be a problem of the same magnitude for the platoon sergeant as it was for the two categories of commissioned officers discussed earlier.

Only one of the six platoon sergeants had previous DSU experience. If the ratio of one platoon sergeant with prior DSU experience to five platoon sergeants without prior DSU experience is even remotely representative, training in DSU operations for platoon sergeants may be indicated, providing there is enough difference between DSU operations and other repair parts supply jobs to warrant the special DSU training.

## MECHANIZED ACCOUNTING SYSTEM PROBLEMS

Management. Mechanized stock accounting system management problems reported included coordination of the mechanized stock accounting system (3), and coping with special data requirements and reports (3). Two reported no management problems.

Both management problems were cited by two NCOs. Two other NCOs indicated but one type of management problem. The three respondents who reported coordination problems indicated difficulties coordinating the workflow between the NCR 500 system and the warehouse.

The two NCOICs who did not mention management problems had not had formal NCR 500 training, did not indicate the need for such training, and were the two NCOICs who appeared to devote most of their time to warehouse operations.

Three respondents mentioned special data requirements that took them away from normal operations as a problem. The special requirements noted were requirements for demand history, key punching personnel data, and key punching weapon serial numbers.

These management problem data indicate the need for mechanized stock accounting system training at three levels: the maintenance battalion and management levels above the battalion; the platoon sergeants themselves; and personnel subordinate to the platoon sergeants, particularly in the storage activity.

Training needs for higher management levels were indicated by the fact that half of the platoon sergeants noted that requests for special data were a problem.

Training needs for the platoon sergeants and for their subordinates were indicated as half of the NCOs reported difficulties in coordinating the various functions and operations of the system.

Warehousing. Warehousing problems reported included: receiving (1), location of stock (4), stock balance (2), and issuing (1). Two respondents reported that they did not have any warehousing problems.

One respondent said he had problems with receiving, issuing, and stock locations not being known. He indicated that the receiving and issuing difficulties were more a function of personnel shortages than anything else. Two respondents reported a problem with stock location and stock balance. The fourth said his only warehousing problem was stock location.

Two NCOs did not report warehousing problems. One of them was attached to a DSU having a civilian control organization operating the warehouses. The other was attached to a DSU having a well-organized and well-staffed warehouse that was operated by Army personnel.

The same general warehousing problem indicated by the other groups of respondents was likewise suggested by the platoon sergeant interviews, that is, lack of organization. This general problem was indicated by four of the six platoon sergeants. These data, as the other respondent group data, indicate that lack of training, inappropriate assignment, and low motivation are substantial contributions to this condition.

DSU Personnel. All six respondents reported problems with DSU personnel that included: lack of training of mechanized stock accounting system managers (technical supply officer) (1); lack of supply trained personnel (4); lack of storage trained personnel (2); personnel turnover (2); and motivation or initiative of personnel (2).

Repair parts supply appears to be the major area of training deficiency of subordinates as seen by the platoon sergeants.

Training in storage procedures and techniques for storage personnel is also indicated by this data as a problem but perhaps to a somewhat lesser extent than supply.

Customers. Five of the six respondents reported having problems with customers that included: prepunched requisitions not used (3); prepunched requisitions received in

damaged state (3); incorrect requisitions (2); abuse of priorities (1); PLLs not furnished or updated (1); status not understood (1); and PLL clerk not trained (1).

The one respondent who did not mention having customer problems was an NCO who spent most of his time with the warehouse operation.

As in the case of other groups of respondents, the platoon sergeant data indicate that a considerable number of customer units were not following supply system procedures as closely as supply system discipline and efficiency would prescribe. These problems were mentioned by five of the six NCOs.

The area of difficulties with customers indicated by the platoon sergeants tended to be rather narrow, being concerned for the most part with requisitions. This situation can be attributed to the need for training customers in PLL procedures and conceivably to the lack of willingness to follow supply procedures.

Staffing. Four of the six respondents said that the mechanized stock accounting system in their DSU was adequately staffed.

Two respondents said their systems were understaffed. One felt that two more key punchers were needed. The other said that there was not an NCO to supervise the mechanized stock accounting system.

Only one of the six NCOs thought that the storage activity of his DSU was adequately staffed. Four said that the warehouse was understaffed in their case. One respondent was attached to a warehouse staffed by a civilian contract firm.

Unlike the battalion management personnel and the technical supply officers, the platoon sergeants appeared to feel that their DSUs were understaffed.

## ATTITUDES TOWARD THE MECHANIZED STOCK ACCOUNTING SYSTEM

The attitudes of the platoon sergeants followed the same general pattern as the technical supply officers and the battalion management personnel. Most (five of six) of the respondents had both positive and negative comments to make about the mechanized system, although in the case of the platoon sergeants everyone had some criticism of the system. One NCO respondent felt the system was inefficient.

Comparison of Mechanized and Manual Systems. The four respondents who said that the mechanized system was more efficient than the manual system included the NCO who said that the system was generally inefficient. Two NCOs did not make any comparison because they had not had manual experience.

Only one respondent said that the manual system had an advantage over the mechanized, and that was that the manual system could handle a work backlog easier. The platoon sergeant who appeared to be avoiding the mechanized system said that it was more efficient than the manual, but that he preferred the manual system.

Comments on Mechanized System Publications. Three respondents felt the publications were easy to use, and one said they had both easy and difficult-to-use features. Two NCOs did not comment.

The NCO who made the single negative comment about the ease of use of the mechanized system publications said that the codes (status, transaction, etc.) were not explained as well as they should be.

One NCO who said he used the procedures manual (ST 38-10-711-1)[1] and the operator's manual (ST 38-10-711-2)[2] did not comment on the ease of use.

[1] Stock Control and Supply Accounting Procedures, *op. cit.*
[2] Operator's Manual, *op. cit.*

Two of the four respondents who said that the NCR 500 system manuals were easy to use indicated that they used a specific manual.

One of the six NCOs said he had used the CSC inspection checklist. This respondent appeared to be one of the more knowledgeable NCOICs and seemed capable of using this management tool effectively.

Career Intentions. All six platoon sergeants were leaving the Army at the end of their present enlistment or obligated service. Three NCOs were going to retire. The other three were not going to reenlist.

## CONTACT WITH THE COMPUTER SYSTEM COMMAND DSU/GSU FIELD TEAMS

Five of the six respondents reported that they had had contact with the DSU/GSU Field Teams prior to the time of the author's visit. The single platoon sergeant who had not had previous contact was one who had indicated that he devoted nearly all of his time to the warehouse, who had had no NCR 500 training, and who did not indicate any need for additional training.

Types of assistance received by the respondent's DSU from the Computer System Command DSU/GSU Field Teams included: inspection and/or evaluation (3), maintenance (1), procedures (3), training (1), and conversion (manual system to NCR 500 system) (2).

Four of the respondents reported that the DSU/GSU Field Teams had provided some type of assistance which they considered to be valuable. Two NCOs mentioned three kinds of aid and two reported assistance in two categories. One NCO had had no contact with the teams.

It is apparent that the platoon sergeants considered the DSU/GSU Field Team assistance valuable because of the help in managing the system which they provided. This attitude is a further indication that additional training in the management of the mechanized stock accounting system was needed for the platoon sergeants.

## Chapter 5

# STOCK ACCOUNTING NCOs

## JOB DESCRIPTION

The respondents that make up this group have duty positions at two levels of noncommissioned (or specialist) supervision of the stock control activity of the supply platoon (or the DSU) of the main support company of a maintenance battalion. The duty positions concerned are usually designated as the Stock Control Supervisor and the Senior Stock Accounting Specialist. The Stock Control Supervisor, in addition to supervising and coordinating the stock control activities, also maintains liaison with the storage activity, the customers, and the higher sources of supply such as the depots.

The Senior Stock Accounting Specialist is at the next lower supervisory level. He has supervisory responsibilities similar to those of the Stock Control Supervisor, but he is less concerned with liaison and more involved with and has closer supervision of the stock control operations in general and of the mechanized stock accounting system operations in particular.

Both of these duty positions obviously require the incumbents to be knowledgeable about the NCR 500 system and its procedures.

## GROUP COMPOSITION

Fourteen stock accounting NCOs were interviewed. Eight of them were specialists, five were NCOs, and one was an E-5 who was an acting sergeant.

Not all of the respondents had Stock Control Supervisor or Senior Stock Accounting Specialist titles but their duty positions could be placed in either of these categories. Eight of the supervisors could be classified as Senior Stock Accounting Specialists, and six as Stock Control Supervisors.

Ten of these supervisors were in their first tour of enlistment in the Army, while four had prior Army service. There is a tendency for the Stock Control Supervisor to have prior Army service (4/6) but for the Senior Stock Accounting Specialist to be in his first tour of Army service (8/8).

Table 6 lists the stock accounting NCOs by DSU, rank, duty MOS, primary and secondary MOS (where available), and relationship between duty MOS and primary or secondary MOS.

Assignment of Personnel. Eleven of the 14 respondents had primary MOSs that were identical to their duty position MOS. Of these 11 supervisors, nine had the NCR 500 qualification designation (G3) added to their primary MOS (76P20G3).

One supervisor had a secondary MOS that was identical to his duty MOS, while another had a primary MOS that was related to his duty MOS. One respondent's primary MOS was not related to his duty MOS.

It appears, at least with respect to this group of supervisors, that qualified personnel tend to be assigned to stock control supervisory duty positions.

Job Turnover. In considering the geographical area data, it should be remembered that the number of respondents was very small and the extent to which these data

Table 6

**Stock Accounting NCOs: Relationship of Duty MOS to Primary or Secondary MOS**

| DSU | Rank | Duty MOS | Primary MOS | Secondary MOS | Relation of Duty MOS to Primary or Secondary MOS |
|---|---|---|---|---|---|
| ALPHA | E-6 Staff Sgt. | 76P40 (Stock Control and Accounting Specialist) | 76T40 (Aircraft Repair Parts Specialist) | -- | Related to Primary |
| BRAVO | E-5 Sp/5 | 76P20G3 (Stock Control and Accounting Specialist - NCR 500 Qualified) | 76P20G3 | 76Q20 (Special Purpose Equipment Repair Parts Specialist) | Identical to Primary |
| CHARLEY | E-6 Staff Sgt. | 76P40G3 (Stock Control and Accounting Specialist - NCR 500 Qualified) | 76U40 (Communications Electronics Repair Parts Specialist) | 76P40G3 | Identical to Secondary |
| DELTA | E-5 Sgt. | 76P20G3 (Stock Control and Accounting Specialist - NCR 500 Qualified) | 76P20G3 | -- | Identical to Primary |
| ECHO | E-5 Sp/5 | 76P20G3 (Stock Control and Accounting Specialist - NCR 500 Qualified | 76P20G3 | -- | Identical to Primary |

*(Continued)*

Table 6 *(Continued)*

**Stock Accounting NCOs: Relationship of Duty MOS to Primary or Secondary MOS**

| DSU | Rank | Duty MOS | Primary MOS | Secondary MOS | Relation of Duty MOS to Primary or Secondary MOS |
|---|---|---|---|---|---|
| FOXTROT | E-4<br>Sp/4 | 76P20G3 (Stock Control and Accounting Specialist - NCR 500 Qualified) | 76P20G3 | -- | Identical to Primary |
| GOLF | E-5<br>Sp/5 | 76P20G3 (Stock Control and Accounting Specialist - NCR 500 Qualified) | 76P20G3 | -- | Identical to Primary |
| GOLF | E-5<br>Sp/5 | 76P20G3 (Stock Control and Accounting Specialist - NCR 500 Qualified) | 74G20 (Assistant Systems Analyst) | 34D20 (ADP Repairman) | Not Related |
| HOTEL | E-5<br>Sp/5 | 76P20G3 (Stock Control and Accounting Specialist - NCR 500 Qualified) | 76P20G3 | -- | Identical to Primary |
| INDIA | E-4<br>Sp/4 | 76P20G3 (Stock Control and Accounting Specialist - NCR 500 Qualified) | 76P20G3 | -- | Indentical to Primary |

*(Continued)*

Table 6 *(Continued)*

**Stock Accounting NCOs: Relationship of Duty MOS to Primary or Secondary MOS**

| DSU | Rank | Duty MOS | Primary MOS | Secondary MOS | Relation of Duty MOS to Primary or Secondary MOS |
|---|---|---|---|---|---|
| KILO | E-5<br>Acting Sgt. | 76P40G3 (Stock Control and Accounting Specialist - NCR 500 Qualified) | 76P20G3 | -- | Identical to Primary |
| LIMA | E-4<br>Sp/4 | 76P20G3 (Stock Control and Accounting Specialist - NCR 500 Qualified) | 76P20G3 | -- | Identical to Primary |
| LIMA | E-6<br>Staff Sgt. | 76P40 (Stock Control and Accounting Specialist) | 76P40 | -- | Identical to Primary |
| MIKE | E-7<br>SFC | 76P40 (Stock Control and Accounting Specialist) | 76P40 | 76Y40 (Unit and Organization Supply Specialist) | Identical to Primary |

approximate the real values for these areas is unknown. The number of months on the job in Vietnam ranged from 3 to 22, with an average of 12.2; Thailand 4 to 6, with an average of 3.3; and Korea 3 to 12 with an average of 5.

The overall average number of months on the job was 8.3. This figure is probably high as the time-on-the-job data for Vietnam, where most of these respondents were located, appears to be biased by the presence of five supervisors having 11.5 or more months in their duty positions. Three of these five respondents had extended their service in Vietnam, while the other two were at the end of their tour there.

## MECHANIZED STOCK ACCOUNTING SYSTEM TRAINING

### FORMAL, INFORMAL, AND COMBINED TRAINING

Nine of the 14 supervisors reported having had formal training that included: U.S. Army Quartermaster School NCR 500 training, [enlisted[1]] (7); DSU/GSU Field Team Vietnam, Operators Course (2); and conversion briefings (1). Five respondents said they had not had any formal training.

Only one respondent reported more than one type of formal training: the NCR 500 system training course at the QMS, and the operator's course given by the DSU/GSU Field Team. He was serving in a Senior Stock Accounting Specialist duty position.

There seems to be some relationship between the level of supervision and whether the respondent had formal training in the QMS enlisted course, or the operator's course given by the DSU/GSU Field Team. Six of the nine respondents who had attended these formal courses were in Senior Stock Accounting Specialist jobs. Two of eight Senior Stock Accounting Specialists reported no formal training.

The personnel with the greatest amount of formal training in the NCR 500 were thus in duty positions having the closest supervision of the NCR 500 system. Other factors were probably involved as well. The system is relatively new and well-trained supervisors tend to be in their first enlistment, not having been in the Army long enough to reach senior supervisory jobs. Furthermore, as will be seen, most of those with formal training leave the Army at the end of their first tour.

Twelve of the 14 respondents reported having had informal training that included: mechanized stock accounting system manuals, SOPs, briefing materials, and so forth (12); demonstrations and instructions from personnel operating the NCR 500 system (6); and miscellaneous briefings and orientation (2). Two respondents said they had not had any informal training.

Of the seven supervisors who had completed the mechanized stock accounting training course at the U.S. Army Quartermaster School, four reported they had studied mechanized stock accounting system manuals. One reported that he had learned by demonstrations and instructions from personnel operating the equipment and that he had also studied the manuals. The other two who were QMS trained did not mention informal training.

The six supervisors who reported learning from personnel operating the mechanized system also reported the use of mechanized stock accounting system manuals. Two of these NCOs had completed the two-day supervisor's course given by the DSU/GSU Field

[1] Nearly all the enlisted personnel who attend the NCR 500 system training at the U.S. Army Quartermaster School are selected from those who have completed the Stock Control and Accounting Specialist Course. There are provisions for NCOs to attend this course also, but none of this group of respondents were NCOs when they did attend. Five spaces in each class are reserved for NCOs. According to information obtained from the QMS, NCOs seldom take this training.

Team, Vietnam. Four of these six supervisors had reported no formal mechanized stock accounting system training.

It is highly probable that all of the supervisors learned more about their jobs from manuals and from other personnel on the job, whether or not they reported this to be the case.

Two supervisors reported that they had had formal training only, five reported informal training only, and seven reported having had both formal and informal training.

## MECHANIZED SYSTEM TRAINING NEEDS

Two of the 14 supervisors expressed the need of further training including fundamentals of the system, its operations, limitations, and capabilities; operation and function of the equipment and the computer programs; and management of the system.

The two respondents wanting further training were stock control supervisors. Both expressed a need for additional training on the mechanized stock accounting system; neither had had formal training. One—an NCO in a unit that had just completed the conversion process and so was rather new to the mechanized system—identified three areas in which he felt the need for training. The other supervisor apparently did not feel that he had learned enough in eight months on the job; he preferred to take formal training rather than OJT.

Twelve of the respondents felt they could perform on their jobs adequately and that additional mechanized training was unnecessary.

Comments on the formal mechanized training received by enlisted personnel at the U.S. Army Quartermaster School are based, for the most part, on the supervisor's opinions of the competency that the school-trained personnel exhibit after being assigned to their first jobs. In the case of supervisors who were trained at the QMS, the opinions are also based on their own training.

Comments on training were made by all 14 respondents and included: students learn the fundamentals of the system, but job experience needed (11); more training coverage needed of: supply and supply procedures (10), NCR 500 system procedures (8), equipment operation and function (7), computer programs, meaning and use of (5); special problems and conditions encountered in the field (9); and valuable handouts received in training (4).

The data indicate that most of the supervisors feel that the students learned some of the required basic knowledge, but not enough. All 14 supervisors felt the course needed additional coverage of several aspects of the mechanized stock accounting system, particularly supply and supply procedures.

Mechanized Stock Accounting Experience. Ten respondents were former NCR 500 computer operators. All were in their first tour; all of the seven respondents who had completed the formal mechanized system training at the Quartermaster School had been NCR 500 computer operators; two had previously served as operators in another NCR 500 system, changing DSUs when they became supervisors; eight were supervisors in the same mechanized stock accounting system in which they had served as operators; two were Stock Control supervisors, eight were in Senior Stock Accounting Specialist duty positions.

Of the two respondents who had had previous service as supervisors in other mechanized systems, one had previously been an NCR 500 computer operator in a different DSU than his present one, and was in his first tour; the other had OJT as an NCOIC of another DSU and had received no other training. He had been in the Army for seven years.

Of the three respondents who did not have prior experience with the mechanized system, all were serving in stock control supervisor duty positions; two were Army career men; and one had been in the Army for 19 years, but was going to leave at the end of his enlistment.

Eleven of the 14 supervisors had had both training and experience in their jobs, while three had received training only.

These data primarily indicate that there is a need for mechanized system training to be given to a greater number of stock accounting NCOs. The essential problem is the number of supervisors who have been trained on the mechanized system rather than the adequacy of the training that has been given.

The mechanized system training needs appear to be somewhat more acute at the level of the Stock Control Supervisor (the higher supervisory level) than at the level of the Senior Stock Accounting Specialist duty position. A smaller proportion of the Stock Control Supervisors seem to be formally trained than the Senior Stock Accounting Specialists. The latter, being at a lower supervisory level, tend to be promoted to this duty position from the computer operator job during the same tour in a DSU or a command. It is less likely that promotion to Stock Control Supervisor can be achieved in one tour with a DSU.

Stock accounting supervisors who had completed the mechanized system training given by the U.S. Army Quartermaster School indicated that they learned the fundamentals of the NCR 500 system, but that the training should give more coverage of repair parts supply, special problems and conditions encountered in the field, and mechanized stock accounting system procedures, equipment, and computer programs.

## REPAIR PARTS SUPPLY TRAINING

Twelve of the 14 supervisors reported having had formal repair parts supply training including: U.S. Army Quartermaster School, Stock Control and Accounting Specialist Course (9), Supply Management Course (1), Special Purpose Equipment Repair Parts Specialist Course (1); U.S. Army Transportation School Aircraft Supply Course (1); general supply course (3); field training (2); and NCO Logistics Program (1). Two respondents reported that they did not receive formal training in repair parts supply or on the NCR 500.

Included among the nine supervisors who had attended the Stock Control and Accounting Specialist (MOS 76P20) course at the QMS were the seven respondents who had also completed the QMS NCR 500 training.

All 14 of the respondents reported having had supply experience prior to the duty positions held at the time of interview. Experience included: unit supply (1); technical supply (2); property book (1); repair parts (1); depot (3); and DSU manual system (1), NCR 500—other than present system—(2), DSU to which attached when interviewed (10); and mechanized supply—other than NCR 500 (2).

Most of the variation of repair parts supply experience is due to three senior NCOs (Stock Control Supervisors) who reported six, three and two kinds of experience respectively. Two supervisors had prior experience in DSUs having NCR 500 systems. One said that he had had experience in all of the three DSUs having NCR 500 systems in his battalion.

Seven of the supervisors reported they had had only training in supply, five reported having had both training and experience, while two reported not having training or experience.

The Stock Control Supervisors had completed more formal training courses in supply, and the courses were more diverse than the training received by the Senior Stock

Accounting Specialist. The repair parts supply training of the Senior Stock Accounting Specialist tended to be confined to the Stock Control and Accounting course given by the U.S. Army Quartermaster School.

The repair parts supply experience of the Stock Control Supervisors was broader than that of the Senior Stock Accounting Specialists. This is to be expected, as the Stock Control Supervisors were more senior and had more Army experience.

The data indicate that repair parts supply training does not present a serious problem for the Stock Accounting Supervisors. Of the two types of supervisors, the Stock Control Supervisors may be somewhat better equipped primarily because of their greater experience in supply duty positions.

## MECHANIZED STOCK ACCOUNTING SYSTEM PROBLEMS

The cateogries of problems are the same as those listed previously for other groups of respondents—problems that can be considered as being related, at least in part, to the lack of mechanized stock accounting system training. The problem categories are: management, warehousing, training and experience of subordinate personnel, and customers.

Management. Thirteen of the 14 respondents cited management problems that included: coordination of the mechanized stock accounting system (7); coordination between the stock accounting activity and the warehouse (7); coping with special data requirements and reports (10); and heavy workload (6). Only one supervisor said that he had not had any management problems.

Coordination problems mentioned were: keeping system operations synchronized and moving, scheduling operations, organizing personnel, and keeping the work flowing smoothly between the storage and the stock accounting activities.

Special data requirements or reports that took time away from regular operations were generally the same as those mentioned by other categories of respondents. This is to be expected since many of the respondents in the different groups were attached to the same DSU. The special data requirements presented problems primarily because they required a considerable amount of manual work.

The essential problem indicated by these data is management of the mechanized stock accounting system workflow, both within the stock accounting operation and between stock accounting and the warehouse operations frequently under heavy workload conditions.

The interview data indicate the need for additional mechanized stock accounting system training at three levels: (a) the maintenance battalion (or management levels above the maintenance battalion); (b) the stock accounting NCOs, although more mechanized system management training needs appear to obtain in the case of the Stock Control Supervisors than for Senior Stock Accounting Specialists; and (c) personnel subordinate to these respondents.

Training needs for higher management levels with respect to the capabilities, limitations and the intent of the mechanized stock accounting system are indicated by the fact that almost three-fourths of the stock accounting NCOs said that special requests for data were a problem.

Training needs for the stock accounting NCOs, their subordinates, and the warehouse personnel were indicated as half of these respondents reported problems in coordinating the stock accounting operation, and half reported difficulties managing the flow of work between the warehouse and the stock accounting operation.

Warehousing. Ten of the 14 respondents reported having warehousing problems that included: location of stock (9); stock balance (5); receiving (1); and issuing (1). Four

respondents reported that they did not have warehousing problems. Two of the respondents who did not mention warehousing problems were from a DSU where warehousing operation was completely handled by a civilian contract firm.

The stock location difficulties were the same as mentioned previously by other groups of respondents: stock mislocated, location not recorded, multiple location, and so forth. The stock balance problems were also the same as those noted earlier, that is basically a disagreement between the ledgers and the actual amount of stock in the warehouse.

DSU Personnel. Twelve of the 14 respondents commented on their problems with DSU personnel. These included: lack of training of mechanized stock accounting system managers (8); lack of supply trained personnel (7); lack of storage trained personnel (5); personnel turnover (3); motivation or initiative of personnel (4). The two supervisors who made no comment were attached to the DSU where the storage activity was handled by a civilian contract firm.

Customers. All 14 respondents reported having at least one problem with customers. These included: incorrect requisitions (2); prepunched requisitions not used (3); prepunched requisitions received in damaged state (3); PLLs not furnished or updated (8); status not understood (6); lost documents (2); abuse of priorities (1); lack of agreement between customer records and DSU records (3); PLL clerks not trained (2); other problems (3); failure to follow-up (2); and poor communication with customer (1).

Essentially the problems come down to the failure—or possible lack of willingness—of customers to follow supply system procedures to the degree consistent with efficient repair parts supply. This situation indicates the need for customer training in PLL procedures.

Staffing. The stock accounting supervisors were asked only about the staffing situation for the NCR 500 system. Staffing conditions in the warehouse were not obtained from this group of respondents.

Nine respondents felt that the staffing of the mechanized system was adequate; two said it was adequate with respect to specific conditions; one felt it was understaffed with respect to specific conditions; and two felt the system was understaffed.

Of the two respondents who said that the NCR 500 system was adequately staffed with respect to certain conditions, one was attached to a GSU that was adequately staffed for his present workload, but with the planned addition of another large unit to support his system would be understaffed. The other respondent said that his system was adequately staffed with the addition of local national personnel.

One supervisor said his NCR 500 system was understaffed conditionally, that his system needed a different configuration of supervisory personnel.

Another supervisor noted the effect of the lack of promotion opportunities because of the absence of the required authorized duty positions.

## ATTITUDES TOWARD THE MECHANIZED SYSTEM

Eight of the 14 supervisors thought that the NCR 500 was an efficient system, while six respondents thought it had both efficient and inefficient features.

This group of respondents appeared to feel somewhat more positively about the mechanized system than did the platoon sergeants. Not one of the supervisors said the system was inefficient. These personnel have generally been closer and more involved with the NCR 500 than the NCOIC personnel; 10 of the 14 stock accounting NCOs were former computer operators. On the other hand, three of the four respondents who had not been computer operators said that the system was efficient.

## COMPARISON OF THE MECHANIZED AND MANUAL SYSTEMS

Twelve supervisors thought the mechanized system was more efficient. Two supervisors could not make a comparison as they had not had manual experience. Only one of the supervisors said that the manual system had an advantage over the mechanized in that the manual did not have equipment breakdowns.

One of the respondents, a senior NCO with 17 years of Army service, and who had much praise for the mechanized stock accounting system, reported resistance to it on the part of other managers.

## ATTITUDES TOWARD MECHANIZED SYSTEM PUBLICATIONS

Ten respondents felt that the mechanized system publications were easy to use, while one said they were not easy to use. Three supervisors did not comment on ease of use. Two supervisors complained that the halts were not indexed.

The one negative comment about the use of the NCR 500 system publications was that it was difficult to find information in publications ST 38-10-711-1,[1] 711-2,[2] and 711-3.[3]

Two of the three supervisors who did not comment on the ease of use of these publications reported using the procedures manual (711-1) and the operator's manual (711-2). Only one respondent of this group of 14 reported using the CSC inspection checklist.

## CAREER INTENTIONS

Eight of the stock accounting supervisors, including five who were trained on the mechanized system at the QMS and one with four years of service, said they were going to leave the Army at the end of their period of obligated duty. One respondent, QMS trained on the mechanized system, had not decided whether he was going to stay in the Army.

Two supervisors, neither QMS trained on the mechanized system, said they were career soldiers. One had 16 years of Army service, the other had 17 years. Two supervisors, one QMS trained, and one specialist did not say what their career plans were.

## CONTACT WITH COMPUTER SYSTEMS COMMAND DSU/GSU FIELD TEAMS

Thirteen of the 14 supervisors reported that they had had contact with the DSU/GSU Field Teams prior to the author's visit. One respondent said he knew about the Field Team but had no contact with the team as he was a night supervisor of the NCR 500 computer system in his DSU.

All 14 respondents indicated that their DSUs had received some assistance from the DSU/GSU Field Teams. Types of assistance received were: inspection and/or evaluation (9); maintenance (6); procedures (9); and conversion (manual system to NCR 500) (4).

[1] Stock Control and Supply Accounting Procedures, *op. cit.*
[2] Operator's Manual, *op. cit.*
[3] Procedures for Conversion of Manual Records, *op. cit.*

Eleven of the supervisors said that the DSU/GSU Field Teams had provided valuable assistance to their NCR 500 systems. Ten respondents felt that the teams were needed and should remain on duty.

One supervisor said that the team did not spend enough time at his DSU. He did not say that the team had provided valuable service but thought it should remain available to him. Another supervisor said he would like to have more assistance with some minor problems but was satisfied with the assistance he had received.

It is evident that the stock accounting supervisors considered this assistance valuable because of the help it provided them in managing the system. This attitude indicates that some additional training in the management of the mechanized system might be of use to the stock accounting NCOs.

Chapter 6

# MECHANIZED STOCK ACCOUNTING SYSTEM EQUIPMENT OPERATORS

## JOB DESCRIPTION

Personnel assigned to the operation of the NCR 500 computer system equipment are responsible for processing various supply transactions involved in the direct support operations. The operators usually operate all of the different items of equipment from time to time and may be assigned to other stock accounting or storage jobs for various periods.

## GROUP COMPOSITION

Ten operators were interviewed, eight of whom were E-4 specialists and two E-3. All were in their first tour of duty.

Table 7 lists the operators by DSU, rank, duty MOS, primary and secondary MOS (when available), and relationship between duty MOS and primary or secondary MOS.

Assignment of Personnel. The duty MOS for the computer operator is 76P20G3, hence the duty MOS for this group of respondents is the same in each case. The primary MOS of eight of the operators was 76P20G3. One operator had a primary MOS that was related to the duty MOS. The primary MOS of the tenth respondent was not related to the duty MOS.

Job Turnover. The number of months on the job for the operators[1] ranged from one-half month to 13 months, with an average of 4.3.

Job turnover in the case of operators has a somewhat different meaning than in the case of managers, noncommissioned or commissioned. The managers, particularly the commissioned officers, tend to move from an NCR 500-system-related job to a job that has little or no connection to this stock accounting system. Noncommissioned officer managers change their jobs much less frequently, and the jobs they change to are more similar to their mechanized stock accounting system-related job.

Change of jobs in the case of the computer operator is more apt to mean either moving up to a supervisory position in the same or another mechanized stock accounting system, or moving from one DSU to another as an operator.

## MECHANIZED STOCK ACCOUNTING SYSTEM TRAINING

### FORMAL, INFORMAL, AND COMBINED TRAINING

Eight of the 10 respondents reported having had formal mechanized system training at the U.S. Army Quartermaster School NCR 500 enlisted personnel course while two

[1] Only two operators were interviewed in Thailand and Korea, and one in Okinawa, so listing by geographical area does not add any information that can be considered reliable.

Table 7

## Mechanized Equipment Operators: Relationship of Duty MOS to Primary or Secondary MOS

| DSU | Rank | Duty MOS | Primary MOS | Secondary MOS | Relation of Duty MOS to Primary or Secondary MOS |
|---|---|---|---|---|---|
| ECHO | E-4 Sp/4 | 76P20G3 (Stock Control and Accounting Specialist - NCR 500 Qualified) | 76P20G3 | -- | Identical to Primary |
| ECHO | E-4 Sp/4 | 76P20G3 | 76P20G3 | -- | Identical to Primary |
| FOXTROT | E-4 Sp/4 | 76P20G3 | 76P20G3 | -- | Identical to Primary |
| FOXTROT | E-3 PFC | 76P20G3 | 11D10 (Armor Intelligence Specialist) | -- | Not Related |
| GOLF | E-4 Sp/4 | 76P20G3 | 76P20G3 | -- | Identical to Primary |
| HOTEL | E-4 Sp/4 | 76P20G3 | 76P20G3 | -- | Identical to Primary |
| INDIA | E-4 Sp/4 | 76P20G3 | 76P20G3 | -- | Identical to Primary |
| JULIET | E-3 PFC | 76P20G3 | 76P20G3 | -- | Identical to Primary |
| KILO | E-4 Sp/4 | 76P20G3 | 76P20G3 | -- | Identical to Primary |
| KILO | E-4 Sp/4 | 76P20G3 | 74E20 (ADPS Console Operator) | -- | Related to Primary |

operators were not given formal training on the NCR 500 system. One of the two had been an Armor Intelligence Specialist and had been the manager of a grocery store in civilian life. The other had been console operator in a computer system quite different from the NCR 500 processing missile data in CONUS. He was assigned to the mechanized stock accounting system after reporting to his company.

All 10 respondents reported additional training or learning on the job. The eight Quartermaster School-trained operators reported that they learned or underwent OJT by working with more experienced personnel and by being cross-trained on the different pieces of NCR 500 system equipment and in different jobs in the stock accounting operation.

The two operators who had no formal training said that they learned essentially by being shown what to do by other personnel attached to the mechanized system.

Eight of the 10 operators reported that they had received both formal and informal training, while two said they had had informal training only.

Training Needs. Three of the 10 respondents said they would like more training in fundamentals of the system: its operations, limitations, and capabilities. One of the three said he would like more training in the operation and function of the equipment, while another said status. Seven operators did not express any training needs.

Of the three operators who expressed the need for training on the fundamentals of the NCR 500 system, two had not had formal training. One had been on the job three weeks, another four months. The third had completed the QMS NCR 500 training, but had not been working in the NCR 500 system to any great extent. He had been assigned to a 30-day guard detail (his DSU was in a combat zone).

Opinions Concerning Training. These opinions are based on the experience that eight of the 14 respondents had had on the job following their training at the Quartermaster School. Two operators who were not trained at the Quartermaster School did not comment. It should be noted that seven of the eight operators who commented on the training given by the QMS also indicated that they themselves did not have the need for additional training in the formal sense at the time they were interviewed.

The following opinions were expressed by the respondents concerning training given by the Quartermaster School: students learn the fundamentals of the system, but job experience needed (4); valuable handouts received in training (5); more coverage needed of: NCR 500 system procedures (5), equipment operations and functions (5), computer programs, meaning and use of (3), and special problems and conditions encountered in the field (2).

A total of 25 comments about mechanized system training were made by eight respondents. Seven of these operators had been on their jobs for two months or longer. One had been assigned only two weeks when interviewed. The operator who made only one comment about his training had been on his job for 13 months.

Mechanized System Experience. All 10 operators were serving in their first duty positions in the NCR 500 system. None had prior mechanized stock accounting system experience.

## COMMENT ON TRAINING

There is little in these data to indicate that training is a problem of any status with respect to the mechanized stock accounting system equipment operators. Eight of the 10 operators had been trained on the mechanized stock accounting system at the U.S. Army Quartermaster School. Two were learning on the job, much like apprentices. Only three of these respondents indicated training needs.

When newly trained operators arrive in the field, they are not, of course, finished products. Job experience is necessary before they become proficient. Lack of job experience, both with the mechanized system and with repair parts supply, appears to be the major problem as far as the job proficiency of the operators is concerned. The effect of this is accentuated where a large number of experienced personnel rotate in a short time span. Large-scale rotation was mentioned as a problem by supervisors.

## REPAIR PARTS SUPPLY TRAINING AND EXPERIENCE

Eight of the 10 respondents had completed the stock control and accounting specialist course at the U.S. Army Quartermaster School. These were the same eight who had also completed the NCR 500 system training at the QMS. Two operators did not receive repair parts supply training, and none reported informal training. All 10 operators were serving in their first duty position involving repair parts supply. None had prior repair parts supply experience.

## MECHANIZED STOCK ACCOUNTING SYSTEM PROBLEMS

Problems in two major interfacing activities were mentioned by the operators—the warehouse and the customers. Problems in these activities were also mentioned by various categories of management personnel.

Warehousing. Seven of the 10 respondents reported warehousing problems that included: location of stock (6); stock balance (2); and receiving (1). Three operators did not mention having warehouse problems.

The problems of the seven operators indicated that a lack of organization was a basic problem in the warehouse. There was some indication that the operators felt this situation was due in part to understaffing.

Customers. Nine of the 10 operators mentioned having problems with customers. These included: incorrect requisitions (2); prepunched requisitions not used (8); prepunched requisitions received in damaged state (2); PLL clerks not trained (3); status not understood (2); procedures not followed (1); PLL not finished or updated (1); lost documents (2). Only one operator did not mention having problems with customers.

These problems can be reduced in large measure to the failure of customers to follow supply system procedures—further indication of the need for customer training in PLL procedures, and/or willingness to follow these procedures.

Staffing. Little comment was made about the staffing of the mechanized system. One operator said his system was understaffed. Another said his system had enough personnel, but needed more QMS-trained operators.

## ATTITUDES TOWARD THE MECHANIZED STOCK ACCOUNTING SYSTEM

Five of the 10 operators felt the NCR 500 was an efficient system, one thought it inefficient, and four respondents said the NCR 500 had both efficient and inefficient features.

The computer operators appeared to feel somewhat positive about the NCR 500 system. This is not surprising since most of the respondents had been intimately involved with the system for most of their Army careers.

The only operator (QMS-trained) who said that the system was inefficient was attached to one of the systems that appeared to have an excessive amount of downtime. He felt that the system was inoperative too much to be efficient.

Comparison of Mechanized and Manual Systems. Seven operators thought the mechanized system was more efficient. Four operators could not make a comparison as they did not have manual experience.

Actually, none of the respondents had experience in a manual system and so could not make a comparison. But eight of the 10 had been trained in the manual system in the Stock Control and Accounting Specialist course at the QMS, so these operators did have some basis for comparison. Interestingly, the three operators who said they couldn't compare the two stock accounting systems were all QMS-trained. The two operators whose only mechanized stock accounting system training was OJT said that the mechanized system was the more efficient of the two.

The operator who said that the mechanized system was generally inefficient felt, however, that the mechanized system was more efficient than the manual.

Two operators commented on the advantages of the manual system. One said that the manual system had no equipment to break down. This respondent was attached to a system that appeared to have excessive downtime. The other operator felt that more errors were perpetrated in the mechanized than in the manual system.

Comments About Job. The exploratory study had indicated that some mechanized system personnel felt uncomfortable in the vans becuase of the requirement to work in confined quarters. The operators were asked how they felt about their jobs in order to test whether there was some substance to the possible feeling about confinement, and to obtain an indication of other attitudes that might exist.

All 10 operators commented on their jobs. Their remarks included: interesting job (3); will help in civilian occupation (2); high caliber personnel in NCR 500 system (2); clean and comfortable working conditions (4); easy job (1); nerve-racking—so many things to do (3); boring—too routine (3); too many hours of work—not enough free time (2); personnel work too closely together (2); and too confining (2).

There does not appear to be a single salient attitude, with the possible exception that the respondents like the clean and comfortable working conditions that the system offers.

Comments on Mechanized System Publications. All 10 respondents commented on the mechanized system publications. Five said they were easy to use, while three said they were not easy to use. Other comments were: publications have both easy- and difficult-to-use-features (1); and halts not indexed (4).

All 10 operators reported that they used the operator's instruction manual (ST 38-10-711-2), while eight used the procedures manual (ST 38-10-711-1). None of the respondents reported using the manual dealing with conversion procedures although one of the operators had participated in the conversion of his DSU. None of the DSUs represented in the operator interviews had recently converted to the mechanized system, however.

Career Intentions. Nine of the 10 operators said that they were not going to remain in the Army after their obligated service expired. The other operator said he had not decided but might remain in the Army if he could become a computer programmer.

## CONTACT WITH COMPUTER SYSTEMS COMMAND DSU/GSU FIELD TEAMS

Six of the 10 operators said that they had had contact with the DSU/GSU Field Teams. Of the four respondents who did not report contact with the teams, three had

been assigned to their systems for a very short time. The fourth was attached to a DSU that had received assistance from the team, but he said he personally had not had contact with the team.

Five of the six operators (one did not comment) who had had contact with the team felt that it was providing a valuable service and should remain on duty. This attitude is further evidence that additional training for the various manager levels of the mechanized system is in order.

Types of assistance received from the Field Teams included: inspection and/or evaluation (4); procedures (4); conversion (manual system to the NCR 500) (1). One operator reported no assistance received.

Three of the operators said that the team had provided two types of assistance. Three operators reported one type of assistance.

## Chapter 7

# STORAGE ACTIVITY SUPERVISORS

## GROUP COMPOSITION

Storage activity supervisors handle mechanized stock accounting system output in the form of prepunched card documents (e.g. material release orders [MROs], and inventory count cards), or provide input to this system (e.g. warehouse denial cards, inventory adjustment cards, and receipts of stock).

Seven storage activity supervisors were interviewed, all in different DSUs. One was a first lieutenant assigned to a GSU; one sergeant first class, grade E-7; four staff sergeants, E-6; and one Sp/5, E-5. All of the enlisted personnel were career soldiers, having had Army service prior to the enlistments in which they were serving. The lieutenant was in his first tour of duty and was not going to remain in the Army after his obligated period of service.

Table 8 lists the storage activity supervisors by DSU, rank, duty MOS, primary and secondary MOS (where available), and relationship between duty MOS and primary or secondary MOS.

Assignment of Personnel. All of this group reported primary MOSs that were in the supply field. Five of the enlisted supervisors reported their primary MOS to be 76P (Stock Control and Accounting Specialist) rather than one of the other supply MOSs that included storage know-how in its required skills. One of the five also said that his duty MOS was 76P20 which is not authorized as a duty MOS for this duty position, although the assignment of an individual with a primary MOS of 76P is possible.

Three of the seven respondents said their primary MOS was identical to their duty MOS; one said his secondary MOS was identical to his duty MOS; and three said their primary MOS was related to their duty MOS.

It is evident that these respondents were serving in duty positions for which they had some MOS qualifications. With the exception of the lieutenant, all of the respondents had had experience in supply duty positions during their Army careers.

Job Turnover. The number of months on the job for the storage activity supervisors ranged from one to nine, with an average of five months.[1]

Job turnover for the storage activity supervisors appears to be about the same as that of other managers: 5.6 for the battalion management personnel, 5.0 for the technical supply officers, and 5.3 for the platoon sergeants.

## MECHANIZED STOCK ACCOUNTING SYSTEM TRAINING AND EXPERIENCE

Formal and Informal Training. Four of the seven respondents reported having had formal training that included U.S. Army Quartermaster School—Supply and Service

[1] No breakdown by geographical area is made because of the small number of respondents. All geographical areas, i.e. Vietnam, Thailand, Okinawa, and Korea, are represented in this group.

Table 8

**Storage Activity Supervisors:
Relationship of Duty MOS to Primary or
Secondary MOS**

| DSU | Rank | Duty MOS | Primary MOS | Secondary MOS | Relation of Duty MOS to Primary or Secondary MOS |
|---|---|---|---|---|---|
| CHARLEY | E-6<br>Staff SGT | 76V50 (Equipment Storage Specialist) | 76P40 (Stock Control and Accounting Specialist) | 76U40 (Communications Electronics Repair Parts Specialist) | Related to Primary |
| ECHO | E-5<br>Sp/5 | 76P20 (Stock Control and Accounting Specialist) | 76P20 | -- | Identical to Primary |
| FOXTROT | E-7<br>SFC | 76S40 (Automotive Repair Parts Specialist) | 76P40 (Stock Control and Accounting Specialist) | 76S40 | Identical to Secondary |
| HOTEL | E-6<br>Staff SGT | 76V40 (Equipment Storage Specialist) | 76P40 | -- | Related to Primary |
| INDIA | E-6<br>Staff SGT | 76V40 (Equipment Storage Specialist) | 76P40 (Stock Control and Accounting Specialist) | -- | Related to Primary |
| JULIET | E-6<br>Staff SGT | 76R40 (Missile Repair Parts Specialist) | 76R40 | -- | Identical to Primary |
| LIMA | O-2<br>1LT | 4200 (Supply and Service Officer) | 4200 | -- | Identical to Primary |

Officer Course (1); and conversion briefings (4). Three respondents did not report any formal training. The Supply and Service Officer Course was attended by the lieutenant, who had also received conversion briefings.

Two respondents reported having had informal training as follows: miscellaneous briefings and orientations (2), and demonstrations by personnel operating the NCR 500 (1). Five supervisors did not report any informal training.

The two supervisors who reported informal training had received no formal training on the mechanized stock accounting system.

Mechanized Stock Accounting System Experience. Only one of the storage activity supervisors reported prior experience with the Mechanized Stock Accounting system. This respondent had received conversion briefings and had served briefly as a key punch operator in another DSU.

Five of the seven respondents had received training only; one had both training and experience; and one had neither training nor experience.

Mechanized stock accounting system training needs were expressed by four of the seven supervisors, and included: fundamentals of the system, its operations, limitations, and capabilities (3); operation and function of the equipment (1); how to read punches in cards (1); and codes (status, document processing, transaction) (1). Three supervisors did not express training needs.

The three who wanted to learn more about the fundamentals of the mechanized system, expressed no other training needs. They were the respondents who had not received formal training in the NCR 500. One NCO, who had received conversion briefings, indicated three training needs: operation and function of the equipment, reading punches in cards, and codes.

Two supervisors said that the Army was reluctant to send personnel to school if they had been in the service for some time.

Comment. These data indicate that formal training on the mechanized stock accounting system does not reach an adequate number of warehouse supervisors. Although formal training on the NCR 500 reached four of the seven respondents, three of them had nothing more than conversion briefings. Two other supervisors received training informally and one reported no training of any sort.

The conversion briefings were given only one time since a stock accounting function is converted to the mechanized system but once. Had it not been for the conversion briefings, only one of the DSU warehouse supervisors would have received formal training on the NCR 500 system. The only supervisor who was formally trained other than by conversion briefings was a first lieutenant who was assigned to a GSU.

The formal training given those who did receive this instruction amounted to only a few hours. These interview data indicate that the supervisors consider this training to have been largely sufficient, since only one who had received formal training indicated a need for additional training.

## REPAIR PARTS SUPPLY TRAINING AND EXPERIENCE

Training. All seven respondents reported having had formal repair parts supply training that included: General Supply School (1); Electronics Communication Supply Specialist Course (1); U.S. Army Quartermaster School, enlisted course (2); NCO Logistics Program (2); field training classes or courses, (4); and U.S. Army Quartermaster School Officer Courses (1).

Experience. Six of the seven supervisors reported having repair parts supply experience that included: unit supply (3); repair parts (3); warehouse (4); depot (4); DSU (3); and mechanized supply (Other than the NCR 500) (1).

With the exception of the lieutenant, all of the storage activity supervisors reported several years of experience with repair parts supply, some of it in warehousing, prior to the duty position held at the time of interview.

Comment. These respondents appeared to have the required qualifications for their jobs. All seven supervisors had completed training in repair parts supply and six had prior experience in repair parts supply jobs.

Training in repair parts supply as such does not appear to be a problem with these supervisors. The need for additional warehousing know-how, while not evident in these data, is rather clearly indicated in other interview data, both from these supervisors as well as by other groups of respondents.

## MECHANIZED STOCK ACCOUNTING SYSTEM PROBLEMS

Management. Four of the seven supervisors reported management problems in coordination of document flow with stock accounting.

Three of the four had received formal training. Three supervisors did not report any management problems.

These interview data indicate the need for additional training for the warehouse supervisors, particularly on the fundamentals of the mechanized stock accounting system and on the workflow and document flow between the storage and stock accounting activities. The data indicate, too, that lack of training and low motivation in the case of the nonsupervisory warehouse personnel also contribute to management problems.

Warehousing. Problems in warehousing were reported by five of the seven supervisors, and included: receiving (3); location of stock (2); stock balance (5); and issuing (1). Two supervisors did not report warehouse operating problems.

The most frequently mentioned problem, stock balance, referred to lack of agreement between the amount of stock shown on the stock accounting ledgers and that actually on hand in the storage activity. This problem was mentioned by five of the seven respondents who also noted the other warehousing problems. For some reason, location of stock, which was the most frequently mentioned warehousing difficulty by the other groups of managers, was mentioned by only two of the supervisors. It is not surprising that this would be an infrequently cited problem by these personnel since it could be considered an admission of operational shortcomings by them.

The two respondents who did not mention that they had warehousing problems indicated that coordination of document flow with the stock accounting activity was a problem.

The problem of lack of agreement between the amount of stock shown on the stock accounting ledgers and that actually on hand indicated that much of this can be attributed to a lack of organization in the storage activity.

DSU Personnel. Five of the seven supervisors reported problems with DSU personnel that included lack of training on a mechanized stock accounting system (5), and lack of storage trained personnel (3). Two supervisors did not mention any personnel problems.

One supervisor who did not indicate problems with untrained personnel, indicated that the caliber of personnel assigned to the warehouse was a problem.

Only one supervisor indicated that there were problems with customers. He said that the supported units were very slow in picking up the repair parts they had requisitioned. The fact that the units supported by this respondent's DSU were located up to 300 miles distant from their direct support may have had some effect on the pickup time.

Staffing. Concerning staffing of the storage activity, two supervisors thought it was adequate, two reported adequate with respect to specified conditions, and three said it was understaffed.

Two supervisors specified that the staffing was adequate when local national personnel were considered.

## ATTITUDES TOWARD THE MECHANIZED STOCK ACCOUNTING SYSTEM

Efficiency. Four of the seven respondents felt that the mechanized stock accounting system was efficient, and gave speed and accuracy as the primary characteristics for its efficiency. One supervisor thought that the NCR 500 system was inefficient because he felt that it was responsible for an increase in double shipments received by his DSU and was of no help to him.

Two respondents said that the NCR 500 had both efficient and inefficient features. Both said the system was fast and accurate, but indicated that he thought the manual system was more flexible. The other confused poor program sequencing with system inefficiency.

Comparison of the Mechanized and Manual Stock Accounting Systems. Six of the seven respondents said that the NCR 500 system was more efficient than the manual, while one supervisor said that the system was generally inefficient.

Four supervisors thought the manual system had advantages including: data more accessible (2); work backlog easier to handle (2); no equipment to break down (1); easier system for local nationals to learn (1); more accurate than NCR 500 (1); and less work required of the storage activity (1).

Some of the manual system "advantages" appear to stem more from a lack of knowledge about the mechanized stock accounting system than any degree of sophistication with that system which would serve as a basis for comparison of the two.

Three of the advantages were given by one respondent, the lieutenant; two were mentioned by the supervisor who felt that the NCR 500 system was inefficient; and two were mentioned by a supervisor who said that the NCR 500 system was faster and more accurate than the manual system.

Thus, the storage activity supervisors indicated that they considered the mechanized stock accounting system to be generally more efficient than the manual system, although their attitudes were perhaps not as positive as those expressed by other managers toward the mechanized system, judging by the number of respondents who said that the manual stock accounting system had some advantages over the NCR 500 system.

## CONTACT WITH COMPUTER SYSTEMS COMMAND DSU/GSU FIELD TEAMS

Five of the seven supervisors reported having contact with the DSU/GSU Field Teams, two for inspection and/or evaluation, and four for conversion. The two respondents who had not had contact with the teams were the two with the least amount of time on the job, that is, one and two months.

Three supervisors said that valuable assistance had been received from the teams. Two who had received conversion help only, said they were dissatisfied with the briefings because they were not comprehensive enough or were not relevant to their jobs.

These data indicate that some additional training on the mechanized stock accounting system should have been given to these warehouse supervisors.

## COMMENT ON STORAGE ACTIVITY

Interviews with personnel in the storage activity did not indicate the severity of one of the major problems, if not *the* major problem, having to do with the efficiency of the mechanized stock accounting system as disclosed in this survey—the state of the main interfacing activity, the warehouse, for which the stock accounting records are kept. Personnel at all levels in the supply platoon, including the warehouse personnel themselves, and the battalion management personnel, indicated that the condition of the warehouse operation was a problem.

The overall problem indicated was a lack of organization, particularly the mislocation of stock, and the lack of accurate record keeping in the warehouse. It seems evident that this condition was related to the lack of training (and experience) of the warehouse personnel, low motivation, shortages of personnel, and inappropriate assignment. (The assignment problem was not indicated by the interviews with the nonsupervisory personnel although the interviewer felt that the most qualified and articulate of the warehouse personnel were made available for these interviews.)

Another factor in the problem of warehouse organization could have been the heavy influx of repair parts that accompanied the buildup of U.S. forces in Vietnam, and to some extent in Thailand. It is possible that the effects of this buildup were still being felt somewhat at the DSU level when these interviews were being conducted. This situation accentuates the need for more storage-trained personnel to be available for such emergencies.

## Chapter 8

# WAREHOUSEMAN

## GROUP COMPOSITION

These personnel were assigned to nonsupervisory duty positions in the storage activity or warehouse of various support units visited. Basically, warehousemen are involved in receiving, storing, issuing, and shipping repair parts. They are also concerned with document flow procedures which are related to the mechanized stock accounting system such as handling material release orders, zero balance cards, inventory count cards, and receiving documents.

Eight warehousemen were interviewed. Five were E-4's, SP/4's and three were E-5, SP/5's. Seven were in their first tour of enlistment, and one was in his second tour.

Table 9 lists the warehousemen by DSU, rank, duty MOS, primary and secondary MOS (when available), and relationship between duty MOS and primary or secondary MOS.

Assignment of Personnel. As shown in Table 9, five of the eight warehousemen had a primary MOS that was identical to their duty MOS. One respondent had a primary MOS that was related to his duty MOS. Two of the warehousemen did not know what their duty MOSs were[1] (although each had served in this duty position for six months); from knowledge of their primary MOS, it is probable that in one case the duty and primary MOS were unrelated, and in the other that they were related.

Four of the respondents said that their duty MOS was 76P20, an MOS that is not usually found in the storage activity. The respondents may have been mistaken, although they appeared to be sure that they had given correct information. Certain TO and E changes had been made for some of these units before the period in which the interviews were held, so the information given by some of the respondents may reflect the older organization.

Job Turnover. The number of months on the job for the eight warehousemen ranged from one to 18 with an average of 8.2 months.[2]

The time-on-the-job data, like that of the stock accounting NCOs, appear to be somewhat high. This is due to the presence of one warehouseman who had extended his period of service in Vietnam and another who was serving in Okinawa, where the tour is longer than it is in Vietnam, Thailand, or Korea.

## MECHANIZED STOCK ACCOUNTING SYSTEM TRAINING

Only one of the eight respondents reported having had formal training and this consisted of conversion briefings.

[1] It is assumed that these two respondents were serving in duty MOSs that were designated as supply MOSs.

[2] Because of the small number of warehousemen interviewed, a breakdown by geographical area did not seem warranted.

Table 9

**Warehousemen: Relationship of Duty MOS to Primary or Secondary MOS**

| DSU | Rank | Duty MOS | Primary MOS | Secondary MOS | Relation of Duty MOS to Primary or Secondary MOS |
|---|---|---|---|---|---|
| ECHO | E-4 Sp/4 | 76P20 (Stock Control and Accounting Specialist) | 76P20 | -- | Identical to Primary |
| ECHO | E-4 Sp/4 | 76P20 (Stock Control and Accounting Specialist) | 76P20 | -- | Identical to Primary |
| FOXTROT | E-5 Sp/5 | 76P20 (Stock Control and Accounting Specialist) | 76P20 | -- | Identical to Primary |
| FOXTROT | E-4 Sp/4 | 76P20 (Stock Control and Accounting Specialist) | 63B20 (Wheel Vehicle Repairman) | -- | Not Related |
| HOTEL | E-4 Sp/4 | Respondent did not know | 52B30 (Power Generation Equipment Operator/ Mechanic) | -- | Not Related |
| INDIA | E-5 Sp/5 | Respondent did not know | 76P20 (Stock Control and Accounting Specialist) | -- | Related to Primary |
| JULIET | E-5 Sp/5 | 76R20 (Missile Repair Parts Specialist) | 76R20 | -- | Identical to Primary |
| JULIET | E-4 Sp/4 | 76R20 (Missile Repair Parts Specialist) | 76R20 | 82C10 (Artillery Surveyor) | Identical to Primary |

The single warehouseman who had formal training was assigned to a DSU that was in the final stages of conversion. Another warehouseman interviewed from this same DSU said he was absent the day that the briefing movie was shown, but he had participated in the conversion process for several weeks.

Three of the eight warehousemen reported having had informal training consisting of personnel operating the NCR 500 system, while five respondents did not report having had any informal training.

All of the warehousemen said they had learned those tasks that involved input to or output from the mechanized stock accounting system while learning their other job functions. These tasks were evidently learned rather unsystematically, one by one, somewhat as an apprentice would learn. Three of the respondents reported that they had been given additional information about the NCR 500 system by personnel operating the equipment.

Only two of the eight warehousemen said that they felt the need for training on the mechanized stock accounting system. Both thought they should know more about the fundamentals of the system and its operation. The remaining six did not indicate a need for training.

Since warehousemen handle both input and output to the mechanized stock accounting system and do not operate any of the equipment, training on the NCR system given warehousemen, while not extensive, does have to be channeled in the pertinent direction.

The need for training on the mechanized stock accounting system for the warehouse personnel was indicated by personnel in all of the other groups of DSU respondents.

Experience. One of the warehousemen reported that he had previously held a clerical duty position in another mechanized stock accounting system, but that he did not learn to operate any of the equipment. None of the other respondents had any prior experience with the mechanized system.

Three of the eight respondents had received only training in the mechanized stock accounting system; one had had both training and experience; and four had not had either training or experience.

Comment. These data indicate that formal mechanized stock accounting system training does not reach an adequate number of warehousemen.

Four of the warehousemen had been given some training on the NCR 500 system but only one reported formal training, and this was a conversion briefing. Three others reported receiving mechanized stock accounting system information from personnel operating the system. This was in connection with temporary assignment to clerical jobs in the stock accounting operation and was thus, in all probability, only peripherally germane to their warehouse jobs.

Only two of the eight warehousemen indicated the need for further mechanized stock accounting system training. The data do not indicate why so few felt this need, particularly given the absence of training.

## REPAIR PARTS SUPPLY TRAINING

Five of the eight respondents reported receiving formal training in repair parts supply consisting of U.S. Army Ordnance Center and School, Ordnance Supply Course—enlisted personnel—(1); U.S. Army Quartermaster School, Missile Repair Parts Specialist Course (1); and General Supply Course (3). Three warehousemen did not report having had any training.

All of the respondents said they had been further trained on their jobs. Warehouse duty positions do not require a complex set of skills. Typically, nonsupervisory

warehouse personnel tend to learn their jobs from other more experienced warehousemen or from the storage activity supervisors, who show the newly assigned personnel how to perform their jobs.

Experience. Two of the eight respondents reported repair parts supply experience prior to their present assignment. One said that he had been assigned to a clerical job at a DSU and the other had a company supply duty assignment. None of the warehousemen had previously been assigned to a storage activity duty position.

While five of the eight warehousemen had received some formal repair parts supply training, these data indicate that such training has not reached an adequate number of warehousemen. There is some evidence that the respondents, although they may have had training in supply, apparently received little or no training in storage procedures and techniques. Interview data from other respondents leave little doubt that training in warehouse procedures and techniques is needed by the warehousemen.

## MECHANIZED STOCK ACCOUNTING SYSTEM PROBLEMS

Generally, the warehousemen did not seem to think that they had many problems as far as the performance of their duty position requirements was concerned. A few difficulties, however, were mentioned by five of the eight warehousemen including: keeping stock moving (1); mislocation of stock (1); document flow (3); federal stock number changes (1); and storage activity understaffed (2). Three respondents did not report any problems.

Document flow, the most frequently mentioned problem, was also cited by other groups of respondents with considerable frequency.

## ATTITUDES TOWARD MECHANIZED STOCK ACCOUNTING SYSTEM

Three of the eight warehousemen said they thought the NCR 500 system was efficient, while four respondents thought the system had both efficient and inefficient features. One respondent said he did not know enough about it to comment.

The pattern of attitudes about the efficiency of the mechanized stock accounting system for this group of respondents is about the same as the response pattern for the other groups. The prevailing attitudes being either positive or having both positive and negative components.

Comparison of Mechanized and Manual Stock Accounting Systems. Six of the eight respondents thought the mechanized system more efficient than the manual, while two could not make a comparison.

Only two of the warehousemen had prior repair parts supply experience that gave them some knowledge of the manual system. Both of these respondents were included among those who said that the NCR 500 system was more efficient than the manual system. The remaining six warehousemen had not had prior experience with the manual stock accounting system, although five of them had manual system training in the formal supply courses that they had completed.

The two respondents who said that they could not compare the NCR 500 system with the manual system had neither prior experience with nor training on the manual stock accounting system.

Only one respondent said that the manual system had some advantages over the mechanized stock accounting system. He said that while the manual system was slower, it does not produce as many errors as the mechanized stock accounting system.

## CONTACT WITH THE COMPUTER SYSTEMS COMMAND DSU/GSU FIELD TEAMS

Only two of the warehousemen reported that they had had contact with the CSC DSU/GSU Field Teams. Both of these respondents were assigned to the same DSU, which was just completing the conversion process. They did not comment further about the teams.

## Chapter 9

# PLL CLERK SUPERVISORS

## GROUP COMPOSITION

Personnel in this group were in supervisory maintenance type duty positions at units (customers) supported by the DSUs in this study. They were concerned with repair parts supply only to the extent that it was involved in their primary functions and maintenance responsibilities.

These personnel were involved with the mechanized stock accounting system in connection with their supervision of PLL (Prescribed Load List) Clerks. The PLL clerks dealt directly with the mechanized system as part of their PLL activities involving the submission of requisitions for repair parts, maintaining the status of submitted requisitions for repair parts, maintaining the unit PLL, and keeping various records pertaining to repair parts authorized to be carried by their unit.

Twenty-two supervisors were interviewed. Their grades ranged from 0-3 to E-5, including warrant officers. A variety of job titles were held by this group of respondents, including maintenance officer, motor officer, material officer, motor sergeant, and supply management officer. Two of the respondents, both 1LT's, were in their first tour of Army service. The remaining 20 supervisors had had prior service and could be considered career soldiers.

Table 10 lists the respondents by supporting DSU, rank, job title, duty MOS, primary MOS, secondary MOS (when available), and relationship between duty MOS and primary or secondary MOS.

Assignment of Personnel. The personnel in this group were assigned to duty positions that matched their qualifications very closely. Nineteen of the 22 supervisors had primary and duty MOSs that were identical. The remaining three had primary MOSs that were closely related to their duty MOS.

Job Turnover. The number of months on the job for the PLL Clerk Supervisors ranged from two to 11 months in Vietnam, 1½ to 12 months in Thailand, and one to 12 months in Korea.[1] The average number of months on the job for Vietnam was 6.4, Thailand 5.7, and Korea 6.8. The average for all areas was 6.1 months.

Although statistical computations are not feasible here, one could argue from a heuristic basis at least, that the somewhat higher average time on the job for this group of respondents may well be reasonably close to the real situation for these duty positions. Because many of these respondents were NCOs or warrant officers, and because of the rather highly technical nature of the duty positions concerned, personnel turnover would tend to be lower for this group.

## MECHANIZED STOCK ACCOUNTING SYSTEM TRAINING

Only five of the 22 respondents reported having received formal mechanized stock accounting system training, including U.S. Army Quartermaster School—Supply

[1] Only one supervisor was interviewed in Okinawa. He had been assigned to his duty position for three weeks, and his data are included in the computation of the time on the job for all areas combined.

Table 10

**PLL Clerk Supervisors: Relationship of Duty MOS to Primary or Secondary MOS**

| Supporting DSU | Rank | Job Title | Duty MOS | Primary MOS | Secondary MOS | Relation of Duty MOS to Primary or Secondary MOS |
|---|---|---|---|---|---|---|
| CHARLEY | E-6 Sp/6 | -- | 34B20 (Tabulating Equipment Repair-man) | 34B20 | -- | Identical to Primary |
| DELTA | CW02 | Material Officer | 286A (Communi-cations-Electronics Repair Technician) | 286A | -- | Identical to Primary |
| ECHO | CW02 | Maintenance Officer | 631A (Automotive Maintenance Technician) | 631A | -- | Identical to Primary |
| ECHO | CW02 | Maintenance Officer | 621A (Engineer Equipment Repair Technician) | 621A | -- | Identical to Primary |
| ECHO | CW03 | Maintenance Officer | 631A (Automotive Maintenance Technician) | 632A (Automotive Repair Technician) | -- | Related to Primary |
| FOXTROT | 0-3 | Maintenance Officer | 1204 (Armored Reconnaissance Unit Commander) | 1204 | 1203 (Tank Unit Commander) | Identical to Primary |
| FOXTROT | CW03 | Motor Maintenance Officer | 631A (Automotive Maintenance Technician) | 631A | -- | Identical to Primary |
| GOLF | 0-3 | Platoon Leader | 4415 (Signal Equipment Main-tenance and Repair Officer) | 4415 | -- | Identical to Primary |

*(Continued)*

Table 10 *(Continued)*

**PLL Clerk Supervisors: Relationship of Duty MOS to Primary or Secondary MOS**

| Supporting DSU | Rank | Job Title | Duty MOS | Primary MOS | Secondary MOS | Relation of Duty MOS to Primary or Secondary MOS |
|---|---|---|---|---|---|---|
| GOLF | E-5 SGT | Shop Supply Supervisor | 76P40 (Stock Control and Accounting Specialist) | 76P40 | -- | Identical to Primary |
| GOLF | E-5 Sp/5 | Assistant Supply Sergeant | 76T40 (Aircraft Repair Parts Specialist) | 76T40 | -- | Identical to Primary |
| HOTEL | E-6 Staff SGT | -- | 76U40 (Communications Electronics Repair Parts Specialist) | 76U40 | -- | Identical to Primary |
| HOTEL | E-7 SFC | Shop Motor Sergeant | 63C40 (General Vehicle Repairman) | 63H40 (Engine and Powertrain Repairman) | -- | Related to Primary |
| HOTEL | CW02 | Maintenance Officer | 631A (Automotive Maintenance Technician) | 631A | -- | Identical to Primary |
| INDIA | E-6 Staff SGT | Motor Sergeant | 63C40 (General Vehicle Repairman) | 63C40 | -- | Identical to Primary |
| INDIA | CW02 | Maintenance Officer | 621A (Engineer Equipment Repair Technician) | 621A | -- | Identical to Primary |
| JULIET | E-5 SGT | -- | 76Y40 (Unit and Organization Supply Specialist) | 76Y40 | 76P20 (Stock Control and Accounting Specialist) | Identical to Primary |

*(Continued)*

Table 10 *(Continued)*

**PLL Clerk Supervisors: Relationship of Duty MOS to Primary or Secondary MOS**

| Supporting DSU | Rank | Job Title | Duty MOS | Primary MOS | Secondary MOS | Relation of Duty MOS to Primary or Secondary MOS |
|---|---|---|---|---|---|---|
| KILO | 0-2 | Technical Supply Officer | 4201 (Supply Management Officer) | 4201 | -- | Identical to Primary |
| KILO | CW02 | Maintenance Officer | 631A (Automotive Maintenance Technician) | 631A | -- | Identical to Primary |
| KILO | E-7 SFC | Motor Sergeant | 63C40 (General Vehicle Repairman) | 63H40 (Engine and Powertrain Repairman) | -- | Related to Primary |
| KILO | 0-2 | Technical Supply Officer | 4201 (Supply Management Officer) | 4201 | -- | Identical to Primary |
| KILO | CW02 | Automotive Mechanics Supervisor | 631A (Automotive Maintenance Technician) | 631A | -- | Identical to Primary |
| KILO | CW03 | Maintenance Officer | 631A (Automotive Maintenance Technician) | 631A | -- | Identical to Primary |

Management Officer Course (3) and field training (2). It would appear that personnel who are assigned to duty positions in DSU customer units involving the supervision of PLL activities seldom receive formal training on the mechanized stock accounting system.

Seventeen of the respondents reported having had informal mechanized stock accounting system training that included miscellaneous briefings and orientation (7) and SOP furnished by supporting DSU (17). Five supervisors did not report having had any informal mechanized stock accounting system training.

A DSU is supposed to furnish support customers with an external SOP containing information about customer unit procedures germane to the NCR 500 system, such as requisitioning repair parts, furnishing updated PLLs, and other matters pertaining to the supporting activities of the DSU. This external SOP can be considered as training literature for the mechanized stock accounting system, more or less specially designed for customer personnel.

Nine DSUs are represented in this group of respondents. The customers of seven of these DSUs said that they had received external SOPs. Altogether 17 of the 22 respondents said that they had external SOPs. One said he had been in his job for only a few days and didn't know whether his unit had an external SOP (one of the other customers of the same DSU reported that he had received an external SOP). Four respondents said they did not have an external SOP from their supporting DSU (two of these supervisors were from units supported by DSUs that had furnished external SOPs to other customers).

The seven supervisors who reported informal briefings, and so forth, also reported that they had external SOPs.

To summarize: two of the 22 respondents received only formal training, 14 received only informal training, three had both formal and informal training, and three did not have either formal or informal training.

Only five of the 22 respondents said they had need for additional mechanized stock accounting system training. Three of them had received either formal or informal training, two had not. Three respondents said they needed to know more about the fundamentals of the system and indicated that they were interested in those basic system functions that pertained to PLL operations and procedures for customer support.

The remaining 17 supervisors did not indicate that they were in need of more information about the mechanized stock accounting system. Included in this group were eight respondents who had had either formal or informal NCR 500 training, and nine who had not.

The primary concern of this group of respondents is maintenance. Detailed knowledge of stock accounting operations at the DSU level is scarcely required, but supply does require their attention to varying degrees. The amount of time spent on supply activities was estimated by each of the 22 respondents. Three said they spent all their time on supply activities, one said about three-fourths, one spent half his time, four spent two-fifths, three spent more than a fourth, six spent one-fifth, and four reported one-tenth.

The three respondents who spent all of their time on supply included two battalion technical supply officers and a sergeant whose duty position concerned communications equipment supply.

Mechanized Stock Accounting System Experience. Only three of the 22 respondents reported having some experience with the mechanized stock accounting system prior to the duty positions they held at the time of interview. One, a sergeant, had taken part in a logistics test at Fort Hood, Texas, involving the NCR 500. The other two were both warrant officers and had served with DSUs that had NCR 500 systems. One had served as a battalion material officer, and the other as a battalion maintenance officer.

Sixteen of the 22 supervisors had received training only, three had both training and experience, and three had neither training nor experience.

Comment. These data indicate that this group of respondents seldom receives formal training on the mechanized stock accounting system (only five of 22 supervisors reported such training).

Training on the mechanized stock accounting system as such does not appear to present a serious problem with respect to this group of respondents. The principal training need for the PLL Clerk supervisors, as far as the NCR 500 system is concerned, seems to be in the use and care of prepunched requisitions. All of the groups of respondents attached to DSUs (except warehousemen) indicated that customers did not use or take care of prepunched requisitions to the extent that they should have.

Personnel in these duty positions appear to need training in repair parts supply, particularly PLL procedures, rather than extensive instruction on the mechanized stock accounting system.

The survey data obtained from this group of supervisors indicate that adequate training on the mechanized stock accounting system as such, might be accomplished by means of a document such as the SOP furnished customer units by their supporting DSU. Training on the NCR 500 system does not appear to present a problem other than mechanized stock accounting system input and output procedures and the physical care and use of prepunched requisition forms.

## REPAIR PARTS SUPPLY TRAINING

Twelve of the 22 respondents reported having had formal repair parts supply training that included U.S. Army Quartermaster School Supply Management Officer Course (2); U.S. Army Signal School—Signal Equipment Maintenance and Repair Officer Course (1); General Supply School (2); various schools—not ascertained (2); and field training classes and courses. None of the respondents said that they had had more than one of these types of instruction.

Only one of the 22 supervisors mentioned informal training in the sense of self-study of regulations, but it seems highly likely that all of the respondents had studied regulations and other literature from time to time.

Repair Parts Supply Experience. Nineteen of the 22 respondents reported having had repair parts supply experience that included unit supply (3); property book (2); repair parts (stock accounting) (1); maintenance (13); depot (1); and mechanized supply (other than NCR 500) (2).

Nineteen of the 22 respondents reported prior experience in supply duty positions. One supervisor said he had property book experience as well as experience with repair parts supply in the course of his maintenance experience. Another reported repair parts supply experience in connection with maintenance duty positions and also mechanized supply experience in CONUS. A third, a 1LT, said he had served in a depot where a large computer was operating. The other 16 respondents indicated but one type of repair parts supply experience. Three said they had no previous supply duty positions, a Sp/5, a 1LT, and a CAPT.

Three of the 22 supervisors said they had had training only, three had experience only, and 16 had both training and experience.

Comment. Twelve of these supervisors reported formal training that concerned repair parts supply. Nineteen reported prior repair parts supply experience. Considering the importance of supply to efficient maintenance operations, these data indicate that not enough personnel in the duty positions represented by the respondents receive organized,

systematic training in repair parts supply concepts and procedures, particularly procedures concerning the prescribed load list.

This conclusion is reinforced by the statements made by DSU respondent groups who indicated that customer units were not following PLL procedures to the extent that they should.

## MECHANIZED STOCK ACCOUNTING SYSTEM PROBLEMS

The respondents reported problems in four interrelated areas: personnel, status, reconciliations, and requisitions.

Personnel. Five of the supervisors reported that lack of trained PLL clerks was a problem, and one of these respondents also said that lack of motivation among the PLL clerks in his command was another problem.

Status. Twelve of the 22 respondents said that status presented problems, and the most frequently mentioned were: incorrect status, status coming in slowly or not received, and inability to interpret status codes.

Reconciliations. Reconciliation inaccuracies were noted by 10 of the supervisors. The most frequent problems were concerned with lack of agreement between the records maintained by the supported units and those maintained at the DSU.

Requisitions. Different problems with requisitions were cited by eight respondents. Requisition problems mentioned concerned lost requisitions, or prepunched requisition forms that were incorrect, slow in arriving, or missing for certain repair parts.

Altogether, 15 of the 22 respondents reported some of the above problems. Seven respondents did not report having any of these problems.

Comment. Only five of the supervisors consider the training of PLL clerks as a problem. The PLL job is rather routine and evidently not difficult to learn. Typically, PLL clerks appear to learn their jobs by working as an understudy to another clerk for a few weeks or months before the senior clerk is due to depart. The supervisors seem to feel that this is an adequate training technique for the job.

## ATTITUDES TOWARD THE MECHANIZED STOCK ACCOUNTING SYSTEM

Six of the 22 supervisors considered the NCR 500 an efficient system; nine thought that the system had both efficient and inefficient features; seven respondents said they did not know enough about the NCR 500 system to comment. Evidently most of the supervisors did not bear strong feelings about the system. Seemingly this objectivity was due to their lack of close association with the system or lack of knowledge about it.

Comparison of the Mechanized and Manual Stock Accounting Systems. Fifteen of the 22 respondents thought the mechanized accounting system was more efficient, while seven said they could not make a comparison as they did not know enough about the NCR 500 system.

One of the 22 respondents said that an advantage of the manual system was that it cost less than the NCR 500 system.

## Chapter 10

# PLL CLERKS

## GROUP COMPOSITION

Prescribed Load List (PLL) Clerks are found in duty positions in DSU customer units. PLL Clerk responsibilities include maintaining the units' supply of authorized repair parts and the various records pertaining to them. PLL Clerks deal directly with the mechanized stock accounting system in connection with submitting requisitions, maintaining repair parts demand data, and keeping the unit PLL.

Thirty-four PLL Clerks were interviewed who were attached to customer units of eight DSUs involved in this research. Personnel of customer units of the General Support Unit and the Supply Point were not interviewed.

There are 18 primary MOSs represented among the 34 PLL clerks. The most frequently mentioned primary MOS was 76S, Automotive Repair Parts Specialist, held by eight of the PLL clerks. Five clerks held MOS 63C, General Vehicle Repairman as primary. The remaining MOSs were only indicated once or twice as primary MOS by the clerks.

Ten different duty MOSs were cited by the respondents. The most frequently mentioned were: 76S, Automotive Repair Parts Specialist (7); 76P, Stock Control and Accounting Specialist (5); and 76R, Missile Repair Parts Specialist (4). The other seven duty MOSs were mentioned once or twice by the clerks. There were eight PLL clerks who did not know the MOS of their duty positions.

By rank, there were 20 PLL Clerks who were E-4, Sp/4; nine were E-5, Sp/5, three were E-3, PFC; one was a sergeant, E-5, and one was an E-2.

Table 11 lists PLL Clerks by supporting DSU, rank, duty MOS, primary and secondary MOS (where available), and relationship between duty MOS and primary or secondary MOS.

Assignment of Personnel. According to the information reported by the respondents, there appeared to be only a fair relationship between the PLL Clerk duty position requirements and the MOS qualification of the incumbents. Only about half of the respondents had primary or secondary MOSs that were related to their duty position MOS—the least of all the groups of respondents for this relationship.

Sixteen respondents said their primary MOS was identical to their duty MOS, and two that it was related to their duty MOS. Seven respondents said their primary MOS was not related to their duty MOS, and one said his secondary MOS was identical to his duty MOS. For eight respondents the degree of relationship was not ascertained.

Job Turnover. The number of months on the job for the 34 respondents ranged from one to 12 months in Vietnam, 1½ to 12 months in Thailand, 2 to 7 in Okinawa, and 1½ to 17 in Korea. The average number of months on the job was 6.8 in Vietnam, 6.2 in Thailand, 4.7 in Okinawa, 6.6 in Korea, and 6.3 overall.

Both the PLL Clerks and their supervisors reported that these personnel tend to stay in their duty positions for their entire tour of duty in the Far East. Some PLL clerks are

Table 11

**PLL Clerks: Relationship of Duty MOS To Primary or Secondary MOS**

| Supporting DSU | Rank | Duty MOS | Primary MOS | Secondary MOS | Relation of Duty MOS to Primary or Secondary MOS |
|---|---|---|---|---|---|
| CHARLEY | E-4 Sp/4 | Did not Know | 76C40 (Telephone Switchboard Operator) | -- | Not ascertained |
| CHARLEY | E-5 Sp/5 | Did not Know | 31E20 (Field Radio Repairman) | -- | Not ascertained |
| ECHO | E-4 Sp/4 | Did not Know | 63B20 (Wheel Vehicle Repairman) | -- | Not ascertained |
| ECHO | E-3 PFC | Did not Know | 71B30 (Clerk Typist) | -- | Not ascertained |
| ECHO | E-4 Sp/4 | Did not Know | 61E30 (Amphibian Engineer) | -- | Not ascertained |
| ECHO | E-4 Sp/4 | 76Q20 (Special Purpose Equipment Repair Parts Specialist) | 76Q20 | -- | Identical to Primary |
| ECHO | E-4 Sp/4 | 76Q20 (Special Purpose Equipment Repair Parts Specialist) | 76Q20 | -- | Identical to Primary |
| FOXTROT | E-4 Sp/4 | 76S20 (Automotive Repair Parts Specialist) | 45G20 (Turret Artillery Repairman) | -- | Not related |
| FOXTROT | E-4 Sp/4 | 76S20 (Automotive Repair Parts Specialist) | 76S20 | 76P20 (Stock Control and Accounting Specialist) | Identical to Primary |

*(Continued)*

Table 11 *(Continued)*

**PLL Clerks: Relationship of Duty MOS To Primary or Secondary MOS**

| Supporting DSU | Rank | Duty MOS | Primary MOS | Secondary MOS | Relation of Duty MOS to Primary or Secondary MOS |
|---|---|---|---|---|---|
| FOXTROT | E-4 Sp/4 | 76P20 (Stock Control and Accounting Specialist) | 76S20 (Automotive Repair Parts Specialist) | -- | Related to Primary |
| GOLF | E-5 Sp/5 | 76U20 (Communications-Electronics Repair Parts Specialist) | 35M20 (Avionic Navigation Equipment Repairman) | -- | Not Related |
| GOLF | E-4 Sp/4 | 76P20 (Stock Control and Accounting Specialist) | 76P20 | -- | Identical to Primary |
| GOLF | E-2 | Did not Know | 67M20 (Single-Engine Single-Rotor Observation Helicopter Mechanic) | -- | Not ascertained |
| GOLF | E-5 Sp/5 | 76T20 (Aircraft Repair Parts Specialist) | 76T20 | -- | Identical to Primary |
| GOLF | E-5 Sp/5 | 76P20 (Stock Control and Accounting Specialist) | 76P20 | -- | Identical to Primary |
| HOTEL | E-4 Sp/4 | 76S20 (Automotive Repair Parts Specialist) | 36E20 (Cable Splicer) | -- | Not Related |

*(Continued)*

Table 11 *(Continued)*

**PLL Clerks: Relationship of Duty MOS To Primary or Secondary MOS**

| Supporting DSU | Rank | Duty MOS | Primary MOS | Secondary MOS | Relation of Duty MOS to Primary or Secondary MOS |
|---|---|---|---|---|---|
| HOTEL | E-5<br>Sp/5 | 76S20 (Automotive Repair Parts Specialist) | 76S20 | -- | Identical to Primary |
| HOTEL | E-4<br>Sp/4 | 71B20 (Clerk-Typist) | 63C20 (General Vehicle Repairman) | --<br>-- | Not Related |
| INDIA | E-4<br>Sp/4 | 76S20 (Automotive Repair Parts Specialist) | 76S20 | 76P20 (Stock Control and Accounting Specialist) | Identical to Primary |
| INDIA | E-4<br>Sp/4 | 76P20 (Stock Control and Accounting Specialist) | 76P20 | -- | Identical to Primary |
| INDIA | E-4<br>Sp/4 | 76U20 (Communications-Electronics Repair Parts Specialist) | 76U20 | -- | Identical to Primary |
| JULIET | E-4<br>Sp/4 | 76Y20 (Unit & Organization Supply Specialist) | 22G20 (NIKE Launcher System Repairman) | -- | Not Related |
| JULIET | E-3<br>PFC | 76R20 (Missile Repair Parts Specialist) | 71B20 (Clerk-Typist) | -- | Not Related |
| JULIET | E-5<br>SGT | 76R20 (Missile Repair Parts Specialist) | 76Y40 (Unit & Organization Supply Specialist) | 76R20 | Identical to Secondary |

*(Continued)*

Table 11 *(Continued)*

**PLL Clerks: Relationship of Duty MOS To Primary or Secondary MOS**

| Supporting DSU | Rank | Duty MOS | Primary MOS | Secondary MOS | Relation of Duty MOS to Primary or Secondary MOS |
|---|---|---|---|---|---|
| JULIET | E-5 Sp/5 | 76R20 (Missile Repair Parts Specialist) | 76R20 | 52B30 (Power Generation Equipment/Operator/ Mechanic) | Identical to Primary |
| JULIET | E-4 Sp/4 | 76R20 (Missile Repair Parts Specialist) | 76R20 | -- | Identical to Primary |
| KILO | E-4 Sp/4 | 76P20 (Stock Control and Accounting Specialist) | 76S20 (Automotive Repair Parts Specialist) | 76P20 | Identical to Primary |
| KILO | E-3 PFC | 76A10 (Supplyman) | 76A10 | -- | Identical to Primary |
| KILO | E-5 Sp/5 | 76S20 (Automotive Repair Parts Specialist) | 63C30 (General Vehicle Repairman) | -- | Related to Primary |
| KILO | E-5 Sp/5 | Did not Know | 63C30 (General Vehicle Repairman) | -- | Not ascertained |
| KILO | E-4 Sp/4 | 76S20 (Automotive Repair Parts Specialist) | 76S20 | 76P20 (Stock Control and Accounting Specialist) | Identical to Primary |
| KILO | E-5 Sp/5 | Did not Know | 63C30 (General Vehicle Repairman) | -- | Not ascertained |
| KILO | E-4 Sp/4 | 76Y20 (Unit & Organization Supply Specialist) | 63C20 (General Vehicle Repairman) | 11B10 (Light Weapons Infantryman) | Not related |
| KILO | E-4 Sp/4 | 76S20 (Automotive Repair Parts Specialist) | 76S20 | 76P20 (Stock Control and Account-Specialist) | Identical to Primary |

promoted out of the job, and others are transferred from the duty position for other reasons, but this is not usually the case.[1]

## MECHANIZED STOCK ACCOUNTING SYSTEM TRAINING

Formal mechanized stock accounting system training reported included U.S. Army Quartermaster School—covered briefly in Enlisted Courses (3), and conversion briefing or orientation (3). Twenty-eight of the 34 clerks did not report having had any formal mechanized stock accounting system training.

These data, although they cannot be considered representative of the state of mechanized system training for PLL clerks in a precise sense, indicate that few PLL clerks have had any mechanized stock accounting system training. Furthermore, from comments made by the respondents, the training received has been little more than a very brief description of the system, apparently no longer than an hour at most.

Only five of the 34 respondents reported informal training on the mechanized stock accounting system. This training was in the form of the external SOP furnished by the supporting DSU. Actually, 29 of the 34 respondents were attached to units supported by DSUs that had furnished external SOPs to their customers. The PLL clerks were not asked if they had seen an external SOP, which may explain the low response.

Six of the clerks reported having had only formal training, five only informal training, while 23 did not report any training.

Training Needs and Experience. Only four of the 34 PLL clerks said that they wanted training on the mechanized stock accounting system, including fundamentals of the system and its operations (3), and how to read punches in cards (1). The clerk who said he wanted to know how to read punches in cards also wanted to know more about requisition procedures.

Not one of the PLL Clerks had experience with the mechanized stock accounting system prior to that of the duty position held at the time of interview.

Comment. The data indicate that most PLL Clerks do not feel the need for additional training on the mechanized stock accounting system. This view is at variance with the opinions of maintenance battalion respondents, more than four-fifths of whom felt that the PLL Clerks did need additional training for their jobs.

## REPAIR PARTS SUPPLY TRAINING AND EXPERIENCE

Twenty of the 34 PLL CLerks reported having had formal training in repair parts supply that included U.S. Army Quartermaster School: Automotive Repair Parts Specialist Course (6), Aircraft Repair Parts Specialist Course (1), Stock Control and Accounting Specialist Course (2), Communications Electronics Repair Parts Specialist Course (1), and Missile Repair Parts Specialist Course (1); PLL part of MOS training (school not ascertained) (1); field training (5); and General Supply School (4). Fourteen clerks did not report any formal training.

Informal training in the sense of on-the-job training as an understudy PLL clerk was reported by 26 of the 34 respondents, including all 14 who said they had not had formal training. Thus, all of the PLL clerks reported some training for their jobs.

[1] Early in this survey it became apparent to the interviewer that the PLL Clerks being interviewed were a rather alert group. Because of this, the clerks were asked how far they had gone in school. The years of education reported ranged from 10 to 16, with an average of 12.8. These data were obtained from 25 PLL Clerks and one supervisor who reported the years of education for four of his clerks.

Eight of the 34 clerks had formal training only; 14 had informal training only; and 12 had both formal and informal training.

Only four PLL clerks reported repair parts supply experience in duty positions held prior to the job held when interviewed. One had prior experience in a depot, two had previous experience as PLL CLerks; one of these had also served in unit supply as well. The fourth respondent had been in unit supply only. Thus, 30 of the 34 PLL Clerks had no previous experience with repair parts supply. Thirty clerks had received training only, while four had had both training and experience.

These data indicate that there are not enough PLL clerks receiving organized, systematic training in repair parts concepts and procedures.

## MECHANIZED STOCK ACCOUNTING SYSTEM PROBLEMS

The PLL clerks mentioned three types of problems having some relationship to the mechanized stock accounting system: status, record keeping, and lack of prepunched requisition cards or forms for all of the repair parts on their PLLs. Actually, this last problem is the only one of the three that is closely related to the mechanized stock accounting system. Status and record keeping are more properly problems of supply procedures.

Requisitions. Customer units are supposed to be furnished with two prepunched requisition forms for each repair part item on their PLL by their supporting DSU (when the DSU has an NCR 500 system). When a prepunched requisition form is used, another prepunched form is sent to the unit by the supporting DSU to replace the one that has been used.

Eleven of the 34 respondents said that their units had either not received any prepunched requisition forms or that they had received these forms for some, but not all their PLL items. They did not appear to know why all of their prepunched requisition forms had not been received.

There were eight DSUs represented among this group of respondents. The 11 PLL clerks who reported this prepunched requisition form shortage were associated with five of these DSUs.[1]

Status. Nineteen of the 34 clerks reported three major problems with status cards: that they were incorrect or incomplete (5); not received or slow to arrive at unit (4); not understandable or unable to interpret (14). Fifteen clerks did not report status problems.

The most common problem, the interpretation of status cards, was noted by respondents in other groups (Stock Accounting NCOs, TSOs, etc.) as a problem their customer units had.

Record Keeping. Eleven PLL clerks reported that keeping their records straight was a problem. Record keeping problems on the part of customers were also cited by the DSU personnel interviewed.

## ATTITUDES TOWARD THE MECHANIZED STOCK ACCOUNTING SYSTEM

Nine of the 34 clerks thought the NCR 500 was an efficient system; five thought the system had both efficient and inefficient features; and 20 said they did not know

[1] Five respondents were attached to units that were supported by a DSU that was completing its conversion from the manual to the mechanized stock accounting system. This DSU had not reached the point in conversion where prepunched requisition forms were being furnished to its customers. These respondents and their DSU are excluded from this statement.

enough about the NCR 500 system to comment. It is evident that the respondents generally knew very little about the system.

The major point of interaction between the mechanized stock accounting system and the customer units is in the process of requisitioning of repair parts. Much of the knowledge about the NCR 500 that is required of PLL clerks is actual knowledge about the requisitioning process, which involves knowing how to use prepunched requisition forms. Twelve of the respondents said that the prepunched requisition form was easy to use and generally made things easier for them.

Comparison of the Mechanized and Manual Stock Accounting Systems. Only seven of the 34 respondents felt that they had a basis for making a comparison between the manual and the mechanized stock accounting systems, and all said that the mechanized was more efficient than the manual system. Two PLL clerks said that the manual system had an advantage in that it did not have any equipment that could break down.

Comment. The survey data indicate that the PLL clerks received very little training on the mechanized stock accounting system. The basic training problem for the PLL clerks is concerned with repair parts supply rather than the mechanized stock accounting system.

Considering that the PLL clerk is primarily a supply duty position with important implications to maintenance, these data indicate that not enough PLL clerks are receiving organized, systematic training in repair parts supply.

## Chapter 11

# SUMMARY

The information in this report reflects those conditions existing at the time the interviews were conducted (mid-1969). Since then, several modifications have been made in the training for personnel in the mechanized stock accounting system. Essentially these changes have been in the direction of more comprehensive training in more courses in more CONUS schools. Nevertheless, it appears that some modification of certain aspects of personnel and training would be worthwhile.

## BASIC PROBLEM

The interview data obtained in this survey indicate that the basic personnel problem experienced by the mechanized stock accounting system is a continued input of under-skilled personnel to nearly all of the duty positions in the system and at its interfaces: the maintenance battalion (or group) management, the associated warehouse or storage activity, and the supported customer units.

There appear to be at least three major interacting factors that contributed to this situation: the lack of training; personnel turnover; and attrition (rate of exodus from the Army) of the first-line managers, that is the technical supply officers, the platoon sergeants, and the stock accounting NCOs, and the equipment operators as well.

## TRAINING OF PERSONNEL

The survey data indicate that training coverage for the mechanized stock accounting system was too narrow on two dimensions: coverage of information about the system, and number of duty positions included in training.

Description of the formal training received in officer courses at the CONUS schools by the respondents who were in technical supply officer or battalion management duty positions suggested that the training given was too abbreviated and did not cover enough material thoroughly. Most of the training only involved between three and nine hours of instruction. This is too brief for much to be remembered, particularly when NCR 500 training is only one of several subjects covered, and when other assignments, or leave and travel time, intervene between training and reporting for duty.

Courses that were more thorough and systematic than the CONUS school officer courses were given by the CSC DSU/GSU Field Team, Vietnam. The team gave a supervisor's course of 16 hours and an operator's course of 20 hours. Both courses were discontinued in 1968.

The most adequate training was, and still is, that given in the 146-hour operator's course by the U.S. Army Quartermaster School. Both NCR 500 equipment operators and a few NCOs are trained in this course.

Training for the personnel of the two major interfacing activities, the warehouse and the supported units, was accomplished in the field, apparently on a one-time basis for the most part. Most of this training appeared to be rather nonuniform and unsystematic.

Warehouse personnel usually received a one-time briefing when a manual stock accounting system was mechanized by the NCR 500. The data indicate that the content of this training may have been too narrow, although warehouse personnel do not have to know the mechanized stock accounting system in depth. After this briefing, training tended to be perpetuated on an unsystematic on-the-job training basis.

Customer personnel were usually trained informally by their supporting DSU by means of liaison units, classes, or SOPs. The evidence indicates that the content of this training tended to be adequate. This training was also usually perpetuated by unsystematic, apprentice-like, on-the-job training, particularly in the case of the PLL clerks.

The data indicate that training on the mechanized stock accounting system did not reach an adequate number of battalion management personnel, TSOs, platoon sergeants, stock control supervisors, warehousemen, and PLL clerks, but that it did reach an adequate number of senior stock accounting specialists, NCR 500 equipment operators, and PLL clerk supervisors.

Around the time the Vietnam Field training courses were discontinued, new training courses were introduced in several CONUS schools, or existing CONUS school training was increased in comprehensiveness. The new courses were primarily for commissioned and warrant officers who might later be assigned to maintenance battalions as technical supply officers or other duty positions involving some management or use of NCR 500 system output. Courses for NCOs who might later become NCR 500 system supervisors have evidently not received the same emphasis as those for commissioned officers, although the need for trained NCOs for this system appears to be rather acute.

The areas where additional training or performance aids could probably make a contribution to the efficiency of the mechanized stock accounting system are identified in Table 12. The data upon which Table 12 is based indicate that there was a need for additional training or performance aid support at almost every job in the mechanized stock accounting system and for those jobs at the system interfaces as well.

## PERSONNEL TURNOVER

Turnover is hardly an unusual problem for the Army. Efficiency is lowered when personnel change from one job to another without gaining enough experience to function proficiently, or rotate almost as soon as they gain enough experience to become proficient. The efficiency of the mechanized stock accounting system, like that of other Army systems, suffers from the effect of high turnover.

One specific turnover problem mentioned by some of the respondents was the tendency in some DSUs for several of their trained and most experienced personnel to be lost at one time. This apparently is the result of an entire NCR crew being assigned to a system at the same time. According to the respondents, a severe strain was put on a system when such rotation took place.

The average number of months on the job for all the respondents in this study was 6.1 months. For the maintenance battalion personnel, the average was 6.0. Assuming that personnel are assigned to these jobs at a fairly even rate, these data indicate that the respondents would hold their jobs for about one year. Considering that most of the personnel input was not comprehensively trained, a year may be enough time for an incumbent to reach optimum proficiency on the more routine jobs but probably not enough for some of the supervisory duty positions.

Turnover would not be a problem if well-trained and experienced job incumbent were being replaced by other well-trained and experienced personnel. However, this was not the case for the mechanized stock accounting system. In this system, trained and

Table 12

## Area of Use and Type of Training That Might Further Efficiency of the Mechanized Stock Accounting System

| Duty Position | Area of Activity for Performance Aid Development | General Area of Knowledge Where Training Is Indicated |
|---|---|---|
| Battalion Management Personnel | Mechanized Stock Accounting System Management:<br>1) Workflow<br>2) Inspection<br>Supply Management | 1) Fundamentals of the NCR 500 system including operation and function of the various system components: hardware, software, and personnel.<br>2) Capabilities and limitations of the system.<br>3) Relation of the system components and functions to repair parts supply management.<br>4) Inspection criteria.<br>5) Supply management; basic concepts and procedures. |
| Technical Supply Officer | Mechanized Stock Accounting System Management:<br>1) Workflow Supply Management | 1) Fundamentals of the NCR 500 system including operation and function of the various system components: hardware, software, and personnel.<br>2) Capabilities and limitations of the equipment.<br>3) Supply management, basic concepts and procedures. |
| Platoon Sergeant | Management:<br>1) Workflow | 1) Fundamentals of the NCR 500 system including operation and function of the various system components: hardware, software, and personnel.<br>2) Document and workflow between the mechanized stock accounting system and the interfacing warehouse. |

*(Continued)*

Table 12 *(Continued)*

**Area of Use and Type of Training That Might Further Efficiency of the Mechanized Stock Accounting System**

| Duty Position | Area of Activity for Performance Aid Development | General Area of Knowledge Where Training Is Indicated |
|---|---|---|
| Stock Accounting NCOs | Management:<br>1) Workflow | 1) Fundamentals of the NCR 500 system including the operation and function of the various system components: hardware, software, and personnel. (For those who were not trained on the NCR 500 system at the U.S. Army Quartermaster's School)<br>2) Document and workflow between the mechanized stock accounting system and the interfacing warehouse.<br>3) Warehouse organization, function, and document flow procedures. |
| Mechanized Stock Accounting System Equipment Operators | Stock Accounting Equipment Operation | 1) Relation of the system components and functions to repair parts supply concepts and procedures.<br>2) Mechanized stock accounting system procedures. |
| Storage Activity Supervisors | Management:<br>1) Workflow | 1) Fundamentals of the NCR 500 system, particularly document flow and the relationship between the storage and stock accounting activities.<br>2) Warehouse procedures and techniques. |
| Warehousemen | Warehousing | 1) Fundamentals of the NCR 500 system, particularly document flow and the relationship between the storage and stock accounting activities. |

*(Continued)*

Table 12 *(Continued)*

**Area of Use and Type of Training That Might Further Efficiency of the Mechanized Stock Accounting System**

| Duty Position | Area of Activity for Performance Aid Development | General Area of Knowledge Where Training Is Indicated |
|---|---|---|
| | | 2) Warehouse procedures and techniques. |
| PLL Clerk Supervisors | PLL Supervision | 1) Repair parts supply concepts and procedures.<br>2) PLL procedures.<br>3) Relationship between the NCR 500 system and PLL activities. |
| PLL Clerks | PLL Operations | 1) Repair parts supply concepts and procedures.<br>2) PLL procedures particularly record keeping and status.<br>3) Relationship between the NCR 500 system and PLL activities. |

experienced personnel were usually replaced by personnel who might have had some training but who were not experienced.

Attrition of Personnel. The third problem that is evident in these data is the attrition of mechanized stock accounting system first-line managers and computer system operators. The attrition problem has existed for years, and the Army had to a degree adapted to it. However, as equipment and systems become more complex, the need for trained and experienced personnel increases. Of 31 first-line managers and 10 operators interviewed, only three said that they were career soldiers, four had not decided, three did not say what their plans were, and 31 were going to leave the Army. While the degree to which the data of this survey are representative of the career intentions of all of the men in those jobs in Far Eastern commands is unknown, these data do indicate that this attrition should be studied to determine how serious it is, and what impact it is having on logistic system efficiency.

The immediate problem for the NCR 500 system, occasioned by this high rate of attrition, is simply that the Army is continually short of personnel trained and experienced in the mechanized stock accounting system for promotion into the key noncommissioned manager duty positions at the E-5 and particularly the E-6 level. This means that the efficiency of the system will remain impaired until more computer system operators and junior managers decide to make the Army a career and can be assigned to duty positions consistent with their skills in mechanized stock accounting.

Assignment of Personel. More than four-fifths of the respondents were serving in a duty position either identical or related to one of their MOSs. The findings reported in Table 12 concerning the need for training on both the mechanized stock accounting system and repair parts supply indicate that this statistic is considered somewhat misleading.

Attitudes Toward the Mechanized Stock Accounting System. The attitudes expressed toward the NCR 500 system tended to be positive. Whether these survey data reflect real attitudes is unknown, but from other comments made outside the interview situation the interviewer is of the opinion that these attitude data generally reflect the feeling about the NCR 500 system.

Staffing. The respondents tended to feel that the various mechanized stock accounting systems were adequately staffed. There were some reservations on this score as far as the warehouses were concerned; more than a fourth of the respondents said that their warehouses were understaffed.

Contact with the U.S. Army Computer Systems Command DSU/GSU Field Teams. These data were obtained from the maintenance battalion personnel only. More than four-fifths of these respondents reported contact with the field teams. More than three-fourths of the managers felt that the teams were providing valuable assistance to them in the management of the mechanized stock accounting system.

Only three of 16 maintenance battalion managers reported using a management checklist for the NCR 500 system that was furnished by the U.S. Army Computer Systems Command.

## CONCLUSIONS

The NCR 500 is the first computer system implemented by the Army for field use in the logistic system on a large scale. Several conclusions can be drawn from the implementation experience in the personnel and training area covered by this research. System efficiency would probably have been promoted by the following:

(1) The Total Systems Approach to Training
   (a) Training for all concerned duty positions.

The study data indicate that adequate training or instruction was not given for all duty positions in the system or for the duty positions in the interfacing activities. When the NCR 500 system was first put in the field the computer system operators were the only job incumbents who received comprehensive instruction. This study indicates that training for managers, such as the maintenance battalion commander, his staff, the technical supply officer, and the enlisted stock accounting supervisory personnel, was too abbreviated to enable these individuals to efficiently assume managerial duty positions for the NCR 500 system.

Training for the personnel of the major interfacing activities, the associated storage activity or warehouses, and the supported customer units was accomplished in the field. A one-time conversion briefing made up the principal source of formal training on the NCR 500 for personnel assigned to the warehouse, the main interfacing activity.

There was little or no systematic, uniform, or continuous training for the other important interface, the PLL clerk and his supervisor at the supported units. Customer training was accomplished largely through their supporting DSU, and varied from DSU to DSU. Training for both of these interfacing activities was accomplished for the most part through unsystematic, apprentice-like on-the-job training.

(b) Integration of NCR 500 system concepts with supply concepts.

Various respondents said that the training courses should thoroughly integrate the NCR 500 computer system concepts and procedures with the logistics operations and concepts that the system supports. NCR 500 system training was criticized as lacking this integration.

(c) Upgrading the storage operation supported by the mechanized stock accounting system.

While the implementation of the NCR 500 system was accomplished to upgrade the stock accounting function of repair parts supply, an equal effort was apparently not made to upgrade the storage operation that is supported by this mechanized system. Many of the efficiency problems of NCR 500 systems can be attributed to inefficient warehouse operations that provide incorrect input information or that mishandle output.

It does little good to have a highly efficient stock accounting system if the repair parts data received from the warehouse are inaccurate. Obviously both system components are equally important as far as logistical efficiency is concerned. The Army should put as much training effort in the storage activity as it does in the stock accounting function.

In addition to the training of warehouse personnel, a more positive attitude toward warehouse jobs should be encouraged. Commanders do not seem to understand that warehouse duty positions require personnel who are alert and motivated to do a good job, and that this is highly important to an efficient repair parts supply operation. Warehouse jobs should not be considered as places to put disciplinary problems or those who have shown little or no aptitude for other jobs.

By the same token, training is required at the customer interface. Stock accounting efficiency can be degraded by poorly and inefficiently operated customer PLL operations feeding inaccurate input data to the computer system or handling output incorrectly.

The Army should also insure that the customers receive proper training in PLL operations as well as those aspects of the NCR 500 system that are relevant to their duty positions. Lack of consideration of these related functions degrades the efficiency of the computer system, not only with respect to the quality of the data but also with regard to the motivation of the computer system personnel.

(2) Assignment of a well-qualified Technical Supply Officer

The NCR 500 system was put in the field without a first-line manager who could manage the computer system qua system and manage the supply mission as well. The principal first-line manager of this system is the Technical Supply Officer. This duty position should have had a technically qualified incumbent who was thoroughly knowledgeable about the NCR 500 system as such, thoroughly knowledgeable about repair parts supply, and well versed about the relationship between the hardware and supply concepts and operations. Instead, this survey revealed that this duty position was nearly always filled by an inexperienced lieutenant.

These data indicate that this assignment practice impaired the efficiency of the repair parts supply functions. It also put an additional strain on the higher level managers who have more than enough to do in carrying out the maintenance functions without the added managerial obligation of technical supply. The job was simply too big for the incumbents. It is also likely that this assignment would discourage these personnel from staying in the Army (only one of the 11 TSOs said they were career officers).

Newer and much more complex computer-supported logistic systems are being developed. The "logistics offensive" with such concepts and policies as "inventory in motion," "planning and logistic intelligent," and "making automatic data processing systems work," obviously involves a much greater requirement for a group of very knowledgeable first-line managers than for the comparatively simple NCR 500 system. The Army will have to put more knowledgeable and experienced personnel in key first-line manager positions in these new systems than was done with the NCR 500 if the new systems are going to function efficiently.

(3) Training more noncommissioned officers with supply experience

If the data obtained in this study pertaining to the career intentions of the first-line managers and the computer system operators are even approximately correct, it is evident that a great deal of time and money have been spent training personnel who are of use to the logistics system for only a short time.

The study data indicate that there is a very inadequate base of trained and experienced personnel from which badly needed first-line managers for the mechanized stock accounting system can be drawn.

In view of this apparent high attrition rate, every effort should be made to train senior career NCOs who are experienced in repair parts supply, on the mechanized stock accounting system. There are spaces allotted for NCOs in the NCR 500 training classes at the U.S. Army Quartermaster School. These spaces rarely seem to be filled. A few NCOs interviewed felt that the Army is reluctant to send personnel to school who have been in the Army for some time. If this is true, the policy should be reviewed. If it is not true, this impression should be corrected.

Retention of personnel may well be even more difficult for the new systems than for the NCR 500 as the higher skilled personnel will probably be in more demand outside the Army, and thus be eligible for jobs paying better salaries than can be paid by the Army.

(4) More field training

These interviews indicate that a considerable number of personnel were assigned to jobs for which their qualifications were less than optimal. Furthermore, personnel were not always assigned directly to DSU jobs following training for them. Sometimes other assignments intervened, or several weeks elapsed between training and reporting for duty.

The NCR 500-based mechanized stock accounting system is relatively complex. Much of the training involves rather detailed and specific procedures that are easily forgotten if not used. Furthermore, given present assignment practices, many personnel who are assigned to duty positions in this system will not be trained or will

have forgotten many of the details by the time they report for duty. This places a training demand on the DSU that should be mitigated as much as possible for the sake of efficiency.

The unsystematic nature of the training received by many respondents in this survey indicates the need for standardized systematic instruction, not only on the NCR 500 system, but on repair parts supply, and storage procedures and techniques as well. A field training facility could have provided for organized, systematic training that could have promoted system efficiency by providing a more capable personnel input and by removing some of the training demands from DSUs that had a limited amount of time for training.

A field training facility could take one of the following three forms, or any combination of the three: a model DSU, on-the-job training packages, and a performance aid system. A model DSU could embody the "hands on" technique in which the trainees learn their jobs, and the jobs of others in the system, by actually performing in these jobs, using real documents, a real NCR 500 to process them, and a real warehouse with real parts to be received, stored, and issued.

System efficiency would be enhanced if the trainees included warehousemen and supported unit personnel (particularly PLL clerks) as well as mechanized stock accounting trainees.

On-the-job training programs complete with training materials and performance aids could be developed for the entire DSU, those management positions at levels above the DSU, and for the customer unit personnel, particularly the PLL clerk.

A system of performance aids would have several advantages. The more job know-how that can be removed from formal training courses and incorporated in performance aids that can be used on the job, the shorter the training required for the system should be, the lower the cost of training, the more use the Army will get from the personnel, and the easier it will be for untrained or partly trained personnel to learn on the job.

Considering the effect of attrition, it is possible that a continued flow of underskilled personnel into the NCR 500 system and into future computer-supported logistics systems will continue. Training for future, more complex, computer-supported logistics systems will be longer and will cost more. Field training as well as OJT will be more difficult; mismanagement, or the lack of trained personnel, will have a more profound effect on efficiency. The need for performance aids may well increase as the system becomes more complex.

Mechanized stock accounting system efficiency was promoted by the assistance provided to the NCR 500 systems in this research by the U.S. Army Computer Systems Command DSU/GSU Field Teams. This assistance was considered to be valuable by a large proportion of the NCR 500 system managers interviewed. Much of this assistance was in the form of management help which the survey data indicate was badly needed.

Assuming that many of the same training problems will apply for the new oncoming computer-supported logistics systems as were experienced with the NCR 500 system, it seems rather evident that this field assistance function will have to be provided—and probably increased—for the new systems. The new systems, being more complex and comprehensive will, in all probability, result in many more of these management, turnover, reenlistment, and training problems than the comparatively simple NCR 500-based mechanized stock accounting system.

# APPENDICES

## Appendix A

# BASIC INTERVIEW QUESTIONS

The basic questions used to collect the interview data for the nine types of duty positions summarized in this report are reproduced in this appendix. These questions were freely supplemented by probes for additional information when the desired information was not forthcoming from the original question and when time permitted. As the probes were of an ad hoc nature, they are not reproduced here.

Questions which were identical for more than one type of duty position are reproduced only once. For the purposes of interview data collection, separate interview guides containing all of the questions used for a given duty position were employed. An 'x' is placed in the column below the number of the duty position for which the question was used. Duty positions are designated as follows:

| Duty Position | Number |
|---|---|
| Battalion Management | 1 |
| Technical Supply Officer | 2 |
| Platoon Sergeant | 3 |
| Stock Accounting Supervisors | 4 |
| Operators | 5 |
| Storage Activity Supervisors | 6 |
| Warehousemen | 7 |
| PLL Clerk Supervisors | 8 |
| PLL Clerks | 9 |

| Basic Question | Duty Position Number 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| What is your MOS? | x | x | x | x | x | x | x | x | x |
| How did you get your MOS? | x | x | x | x | x | x | x | x | x |
| What is your duty position? | x | | | x | | | | x | |
| What is the MOS designated for your duty position? | x | x | x | x | x | x | x | x | x |
| How long have you been in your present duty position? | x | x | x | x | x | x | x | x | x |
| Have you had any formal training, briefings, orientations, demonstrations and so forth on the NCR 500 system? (probes used for CONUS schools; DSU/GSU Field Team, Vietnam; special briefings, orientations, classes etc.) | x | x | x | x | x | x | x | x | x |
| Would you like to have any additional training on the NCR 500 system? In what aspects of the system? | x | x | x | x | x | x | x | x | x |

| Basic Question | Duty Position Number 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| Have you had any experience with the NCR 500 system other than this DSU? Where? When? How long? What was the nature of this experience? | x | x | x | x | x | x | x | x | x |
| Have you had any formal training, briefings, orientations, classes in the field, in repair parts supply? | x | x | x | x | x | x | x | x | x |
| What experience have you had in supply jobs other than your present duty position? | x | x | x | x | x | x | x | x | x |
| How much of your time do you spend in supply activities? | | | | | | | | x | |
| What are your management functions? | x | x | x | x | | x | | | |
| What are your management problems? | x | x | x | x | | x | | | |
| What are your major tasks? | | | | | x | | x | | x |
| What are your most difficult tasks? | x | x | x | x | x | x | x | x | x |
| How are the transactions between stock accounting and the warehouse going? | x | x | x | x | x | x | x | | |
| How are the transactions between the DSU and the customers going? | x | x | x | x | x | x | | x | x |
| Is the stock control activity adequately staffed? | x | x | x | x | x | | | | |
| Is the storage activity adequately staffed? | x | x | x | | | x | | | |
| How do you feel about the NCR 500 computer system? | x | x | x | x | x | x | x | x | x |
| How do you think the NCR 500 mechanized stock accounting system compares with the manual stock accounting system? | x | x | x | x | x | x | x | x | x |
| Have you seen any publications, e.g. CSC (ADFSC) regulations, text books, newsletters, etc. that pertain to the NCR 500 mechanized stock accounting system? | x | | | | | | | | |
| How are these publications with respect to: ease of reading or understanding; finding information; format? | x | | | | | | | | |
| Which of the NCR 500 system publications are the easiest to use? | | x | x | x | x | | | | |
| Which of the NCR 500 system publications are the most difficult to use? | | x | x | x | x | | | | |
| What aspects of the mechanized stock accounting systems do you inspect? | x | x | | | | | | | |

| Basic Question | Duty Position Number<br>1 2 3 4 5 6 7 8 9 |
|---|---|
| Have you used the DSU/GSU Assistance Team inspection checklist? | x x |
| In general how do you like your present job? | x |
| Do you plan to make the Army a career? | x x x x |
| Have you had any contact with the DSU/GSU Assistance Team? In what respect? | x x x x x x x |

## Appendix B

# SELECTED QUOTATIONS FROM PERSONNEL INTERVIEWED

## BATTALION MANAGEMENT PERSONNEL

### Training

". . . in the Aviation Maintenance Officer Course at the Transportation School we had the manual system and since I've been in Vietnam . . . I've been to numerous briefings and self teaching programs to learn this thing . . . it was a matter of studying the regulations and publications . . . the briefings that I've received have not really been designed as orientation to the system. They've been more related to operator kind of thing—by operator I mean user of the machine, not a real orientation . . . I understood the briefings and I think I benefited as much as anyone who was there, but I never got a chance to receive an orientation—an authoritative orientation sort of briefing to the machine. All my knowledge of the machine operation is pretty much based on what I could read and interpret from the regulations."

### Training Needs, Mechanized System

"The basics, program sequence, what you have to have in one step before you can perform the next step . . . a good working knowledge of the general supply procedures as well as requirements . . . the feel for what it takes to get a job done, how much time it takes, . . . what you can expect of your people and how much time they should have to do it."

### Training Needs, Repair Parts Supply

"I have had OJT and supply seminars, but mainly in my case it is self-taught through reading and having worked both at the NICP level and at the unit level, and being able to know and understand what is going on, and my own personal desire to be an expert in the field I am working in . . . you just have to dig in and find it. I learned a lot through seminars and through literature that is passed out, and newsletters, etc."

### Management

"I looked at the reports from all the ___ Group which has 10 DSU operating mechanized stock accounting systems. I tried to evaluate which one was doing a better job versus the other one by the number of lines they had on their ASL, the number of transactions posted, and the number of aircraft supported. I tried to get some trend established, to get some sort of systems capability. Now with most hardware when . . . the military procures it, they list in a publication, specifications saying what can be effected under what kind of conditions. This system doesn't have any parameters as to what is expected and what the capability of the equipment is, and therefore, as a manager you do not know when they say they are saturated whether or not they are, or whether they are getting poor utilization . . ."

### Warehousing

". . . zero balance, that is the big problem with us, obviously . . . most times, if we can get the parts here then it's no problem. Warehousing is always a problem. It's difficult to get people, to get GI's to take warehousing seriously. People don't realize the

importance of accurate warehousing procedures. These small deviations from procedures and warehousing are fatal to the system really, so far as knowing what's on hand and knowing where it's located and controlling it."

### DSU Personnel

"I think our greatest problem in supply is not necessarily the lack of training because there is nothing mysterious about the Army supply system. The problem that I have here in the Battalion is really a lack of initiative. I think this is true both for the officer I have down there and my NCO. The NCO that is there has been there for 7 months. Virtually everything I have looked at in Tech Supply has not been satisfactory. This is a major failing on the part of the NCO's. I can't pin it to the officer. He is a young lieutenant. I think the job is too big for a lieutenant in this environment. He doesn't have the experience. He doesn't have the know-how to handle a job of that magnitude. I have taken the captain from my staff and put him in headquarters in Tech Supply full time."

### Attitudes Toward the Mechanized System

"I think . . . from a psychological standpoint, that it makes supply business a little more attractive. I mean people having a chance to work with sophisticated equipment adds a little dignity and color to it and all that sort of thing, to the stock accounting clerk who used to be a pretty mundane kind of job . . . much faster work, of course, and much more accurate . . . The vulnerability of the thing, of the paper where the temperature is particularly disagreeable for it. Also power source problem continues to be a harassing sort of thing. The vulnerability to frequency vibration or frequency variation voltage regulation causes some problems in some areas."

"It is a very slow system, there is no flexibility within the thing. I cannot get a page print of its output which I need all the time particularly in that it is very essential that I publish stockage lists for my customers, so they will know what is normally stocked within the DSU, and this is particularly true of the construction type items, so that my engineers will request items stocked already instead of going through catalogs and finding a new piece that we never handled before. We are having to develop our own procedures."

### Contact With CSC DSU/GSU Field Teams

"For the people who bumped into this job with no experience whatsoever, the (Team) can be a vital solace. Once the Team gets attention, people listen to them and realize that they are trying to help. They need to be out here. They need to talk to people. They need to come back out. They need to talk to them again. There are a lot of things that happen up in the field that a person behind a desk might say, 'that can't happen. Nothing like that has ever happened. It just isn't so.' Then somebody maybe from the Team will tell them . . ."

## TECHNICAL SUPPLY OFFICERS

### Mechanized System Training

"I believe I received two hours training on the NCR 500 in OCS, one hour of which followed a vigorous PT session and we weren't very receptive. The second hour consisted of a film on the system where it showed the system processing one or two requisitions under ideal circumstances."

"I have an operator's manual here. Every time I can, I look through a few more pages of it. I have an instructor's guide of stock control and supply accounting. This has helped me a little bit and whatever I ask from my NCOIC, has helped me quite a lot to learn more about the system. However, I know I still have a lot to learn."

### Mechanized Training Needs

"I could use additional NCR 500 instruction. I think there are a lot of areas that I still can't tie in, ones I can't understand, and I have to depend a lot on my NCOIC. I think a good three-day course on the procedures to follow would be a worthwhile experience."

### Repair Parts Supply Training

"I think we had four hours on supply management in the Officer Basic Course . . . not repair parts supply management either. Everything I know is what I studied from 711-16 and various AR's."

### Problems With Management

"Trying to contend with individuals on a higher level than myself, in other words, individuals who aren't familiar with the system and who are placing certain requirements on us that impair our mission here. They are placing certain requirements on me that I don't feel we have the capability to do, that is, we don't have the personnel, and I have to try to get these done the best way possible without creating too many incidents."

"I would say getting the total picture, getting everything coordinated properly. You have got to sit back and take a big look at it. You can't get wrapped up in all the day-to-day procedures and not take a good look at the overall picture."

### Warehousing

"The most difficult, not in actual performance of duty, but the most difficult in controlling would be the warehouse. It's harder than most jobs trying to keep the warehouse straight. This is where the problems occur because if the warehouse does not locate the stock where they can find it, they send in incorrect totals to the stock accounting section and what you have in there would not be worth the paper it's written on. My specific problem here is lack of trained personnel. This particular unit never had any tech supply prior to March, and when we started the people we had we drew from other sections, they were school-trained supply people but they never worked in a warehouse. We tried to train them but a lot of them didn't have the interest or ability to immediately take up warehousing."

### Subordinate Personnel

"I think what's difficult about the job primarily is the lack of training your people receive . . . people are trained as operators on the NCR and they know the machine, but what they don't know is the stock control portion of the program, they don't know what the data is that they are putting in and getting out of the machine.

### Customers

"Most of the problems are generated by using units. Problems you typically find are someone at unit level not maintaining accurate and adequate document registers. This quite often results in us having to go back to our records unnecessarily to validate receipts of a requisition or issue a part or status."

"They do furnish me with PLL's. We were having trouble getting them to use prepunched, they didn't understand, seemed to be a little afraid of them. During the monthly visits we explained how much time it would save and how helpful they were so now they use them."

### Comparison of Mechanized and Manual Systems

"It is much better than manual, because it is faster and gives you information that you couldn't get without many hours of computation manually. The disadvantage is that you are limited in the number of line items you can handle . . . one of the best things about the NCR 500, you can tell what you are doing each day."

"Disadvantages can be summed up in one word: downtime. When you are down you have 12 and 17 priorities piling up in your space and you can't do anything about them. Advantages: you have less people working in stock control system which makes for less errors, you can do a lot of things with this system you couldn't possibly do as well manually.

### Attitudes Toward Mechanized Publications

"They are confusing to me. I just don't understand what they are saying. I have a difficult time relating what they are saying to the machine and to the job at hand. Some of those charts they have, the flow of document charts, I prefer to have it written down than on a chart. The document chart does nothing for me. If it is written down in steps and series, I can grasp this a lot easier. This is myself; maybe some other people can grasp the charts better."

### Contact With DSU/GSU Field Teams

"My initial contacts on this system were in the establishment of the system itself. The ADFSC team came out and assisted my people in becoming proficient on equipment. They have been here on inspection visits, and have been down here to provide assistance any time asked. We have a good working relationship with them."

## PLATOON SERGEANTS

### Training

"All of our 10 people have been trained at the QM school, their training is effective except for the fact that going from my own experience at the school there is too much emphasis put on the ideal situations and not enough emphasis put on the way the system has to work over here due to the different supply problems. For instance, when I went to the school there it was said that the ordering ship time for any requisition we would get would be 15 days. My experience has shown over that, it is as much as 100 days."

### Supply Experience

"I worked in the NCR DSU for approximately 15 months prior to the time I took over my present job, I worked in the outside storage, inside storage, shop supply. I worked just about every job in the DSU."

### Problems With Management

"The information that we have to give to whoever asked for it seems like a small amount of information, but when you actually go down and try to breakdown, it takes a lot longer than the deadline given, and it causes the work to be necessarily hurried if you have to meet the deadline."

"We have received several requests for various types of reports from higher headquarters. Approximately half of our time for the day crew is tied up researching various reports. We have received requests for data that the machine was not designed to provide."

### Warehousing

"I am trying to get the warehouse straight. Tech supply is only 2 months old and I have to make sure the warehouse is up to par. I do check some ledgers when it pertains to due outs and due ins . . . one problem is personnel that are not qualified to be in the warehouse. NCR personnel are trained and know their work. The personnel in the warehouse have not had training, we have OJT."

### DSU Personnel Problems

". . . We are having a problem with turnover on personnel and are going to continue having a problem because the individuals don't want to stay here because they don't feel they can get promoted and they can't better themselves here. This is the NCR people."

"A lot of the personnel that come over here have come here just after advanced individual training, whether it be supply or maintenance or whatever it is. It takes some of them a while and it takes others less time to really get into the swing of things with their jobs. Another problem is people rotating back to the States. You get a person trained in a job and the next thing you know he is gone. . ."

### Customer Problems

"PLL's are one of our biggest problems. We recently completed furnishing all of our customers with prepunched and preprinted requisitions. Seventy-two out of our 84 customers have PLL's on hand which is rather good. Less than half of these 72 customers have PLL's up to date. They have not submitted changes, additions, releases, and so on. We can't give them prepunched cards for items that they don't get. We can't make addition to PLL's if they don't send them in."

### Efficiency of Mechanized Systems

"It takes a lot of the manual effort out of the processing of requisitions, filling requisitions, processing repeats and everything else. It is about time the Army's come up with something like this . . . I don't believe myself that the NCR is capable of handling the workload that is put on it by some of the different DSU's. NCR as I understand it is built for about 8,000 to 10,000 line items and we are handling 14,000 something right now . . ."

### Comparison of Mechanized and Manual Systems

"This machine is much faster, doesn't need as many personnel. It is still costing the Army a lot of money, breaks down, the least piece of dust can put the machine down, the machine is too sensitive."

"The manual system may be a little faster but it is not anywhere as accurate. There are built-in safeguards in the NCR system that prevent you from posting one request for one FSN against another FSN . . ."

### Attitudes Toward Mechanized System Publications

"Every newsletter or regulation that we get always has some very valuable information . . . the basic regulation, the 711-1 and 711-2 are always used. They are used every day and as they set up the procedures and policies and the way the work should be run . . . they cover everything we do, except I feel that the NCR system program and everything else is not set up for an aircraft tech supply or primarily for an aircraft tech supply, but rather for a quartermaster type of supply."

### Contact With DSU/GSU Field Teams

"We just had a thorough inspection by the ADFSC. They left us a complete critique of our entire operation including warehousing. They showed up our weaknesses, our administrative problems, problems in maintenance and management. They also pointed out to us that it is necessary to utilize their check sheet as a management tool. It should continue its work. I think they are a big help . . ."

## STOCK ACCOUNTING NCOs

### Training

"I took a course in Saigon. I picked up the MOS after I came over here. We covered what the computer was designed and not designed to do. We didn't have anything on support of customers. We were taught how to use the management tools, and system publications. We got handouts, which were useful."

"NCR school at Ft. Lee is not long enough, people should have more experience, three weeks is not long enough. I would rather have a man with a good supply background and experience, coming out of school helps, but good supply experience is better. For example, the work packs that are going into the machine like a receipt or request is going in, he ought to know just exactly what these are. If he doesn't know what they are, he can't tell if they are correctly punched."

### Training Needs

"There's a lot of training I would like to have. I don't see how they could give it in school, it would be too involved. If they would just give these people a more basic concept of supply, it is easy to train on the machine, the problem comes when they have to make decisions on supply like what's going to be the effect of my making this one decision . . . People working for me have no idea of what supply clerks on unit level are doing. They (the customer units) will send documents to them (the DSU stock accounting personnel) and come up with questions. How should I be doing this? Our people cannot answer them. I feel that if you work on higher level like the DSU, you should know exactly how they should be functioning on a supported unit level."

### Experience

"As I indicated before, you come over here and you don't have too much knowledge at all. You don't have any confidence . . . you are new. So any bad habit that a person . . . the people that are there when you come into the system have got, you are going to pick up . . . all the people that were here were short tour when people have 3 months to go, all they start thinking about is getting out. This is not only in supply, but everywhere. It seems that it is really a big problem. So these people just said, well, 'there it is, it is all yours.'"

### Problems With Management

"I'd say the biggest one is the paper work coming from outside into the inside so it can get posted to the ledger. Keeping the balances on hand straight. Inventories kill you. To inventory this many times out here in a system this large, requires so much time that you get backlogged."

"I received requests for run offs from machine, like an ASL run off. I would have to take all data 1 cards and put them in the machine. It would take 5-6 days for this run off."

### Warehousing

"In this particular system . . . the balance . . . it is extremely messed up right now. I think if you would take any 10 stock numbers, check the total quantity due in with the due in file against the total quantity due in against the ledger, you would find about 50% accuracy and that's all at the present time."

### DSU Personnel Problems

"We have a problem getting trained personnel from school. What we have done is take people that are 76P MOS which is a stock control MOS, and cross-train them to be mechanized personnel. Everywhere we have tried this they have turned out to be very good choices."

"As far as I know the personnel that are put out there (the warehouse) are not working in their MOS, and they're not given any kind of actual training, they're told what to do and how to pull stock but they're not told the little things like watching unit of issues and inventories."

### Customer Problems

"Our customer personnel have no training at all. Most of our customers don't even know that the system here even exists."

"They use prepunched cards, I believe they are in the process now of submitting reviewed PLL's. There is a problem with status cards, but is mostly their own fault, they are too lazy to utilize AR's they have to find out what they are supposed to do with them."

### Staffing

"It needs at least a major in charge, he should be either a signal supply or a quartermaster officer. The NCOIC should be a senior supply specialist, he should be familiar with NCR. Admin. section right now has an E-7 in charge, a PFC should be in Admin. We don't need him. The Accountable Officer should be someplace else. Stock control could be handled by a good E-6 or E-7, he should have good supply background, maybe a senior supply specialist, and good knowledge or school trained on the NCR."

### Comparison of Mechanized and Manual Systems

"It definitely has its advantages in speed and accuracy. It also has disadvantages. We are trying right now to work the machine with a workload the system was not designed to handle . . ."

"The advantages of having the mechanized system over the manual is that you can have more of a workload for a smaller percentage of people. You don't need nearly as many personnel to actually do the same amount of work this is the big thing, it keeps better control of your stock using the mechanized system."

### Mechanized System Publications

"I use ADFSC handbook most frequently. This is a consolidation of all newsletters that have been sent out. We also use 711-1 and -2, we just received these training aids used at Ft. Lee, there are about 4 manuals altogether. I believe one of the manuals replaces the ADFSC 711-1 or -2, I think they are extremely valuable, they are much more concise and easy to find things in them . . ."

### Contact With DSU/GSU Field Teams

"For technical assistance with the machines, we have had a lot of contact. For what I would call system's assistance, we haven't had any. When they come over, we talk over any problems that we have, but that is basically it. But not for technical repair assistance. We use them a lot."

## OPERATORS

### Training

"In school we just basically got acquainted with the machine. When I got over here on the job and got on the machine all by myself without any assistance, I had assistance if I needed it, but to get on the machine without someone watching over you get more out of a feeling of what's going on. Back in school you were given an allotted time on the machine, but there were about 6 other guys in the group that had to run the same program. When you sit down alone, you get a lot more, you get to know what its going to do next. I think right now I know every program that we can run, and can run it fast enough to use it for the purpose it was designed."

"I would like to get one of the course outlines so I can go back and refresh my memory as to what I learned. I worked on another job and then a month's leave before coming here so I have forgotten 90% of what I learned.

### Warehousing

"One of the big problems here is that we'll cut an MRO on a stock number and we'll get a warehouse denial on it, and I could take maybe 50 of these warehouse denials and go out in the warehouse and find anywhere from 5 to 15 of these items out there. One reason for this is because they might have three or four locations for one item. They'll put just one location down on that MRO, and naturally the person pulling that stock will not know to go to look in a different location if it is not on the card . . . They're awful short on men."

### Customers

"Units are constantly after us for status. We get 10,000 status cards a week to put out to our units to sort and get in unit order, and send out. It takes time. They don't use prepunched cards; all manual requisitions. When they fill out manual requisitions, they do not fill them out correctly and we have to make up entries for them on the cards. Sometimes requisitions are received without the quantity wanted. A lot of units think everything can be run fast. They don't realize the hours of preparation it takes. 02 requisitions can get fast priority but normal takes time."

### Attitudes Toward System

"There seems to be a lot of loop holes, there seems to be too many records that have to be kept on it, your due-ins and due-outs. If one gets lost in the warehouse, it's bound to show up and really upset the ledgers. The machine itself is not that reliable, it's fast but the main point is that if it is not done right, the whole thing is fouled up."

"As a whole the system is fairly efficient. The only problems that I've encountered are that if you do have a shortage of personnel, the input that goes into the machine is not going to be as good as it should be, and this causes errors in your output. Your ledger comes out wrong, and it seems like mistakes just multiply on top of each other and before you know it you've really got yourself in a mess."

### Comparison of Manual and Mechanized

"I think the main advantage of the system is the fact that you can process a lot, maybe 100 times more in one day than manual. Manually would take one hour to write out 30 requisitions, computer punches out in about 4 seconds. The disadvantage is that the machine breaks down or something goes wrong you will develop a backlog and have to start doing things by hand and finally when the computer gets back up again, you have to convert all these manual into mechanized."

### Attitude Toward Job

"The main disadvantage of working up there is that we work so close together. Everyone who is with this system has got at least average intelligence or higher depending on the tests. Working this close together you get on each other's nerves and you have little problems that way. As far as advantages . . . I have got a nice place to work. It is better than the average person."

### Mechanized System Publications

"The mechanized stock procedures book is written in such a way that if you just follow step by step, I think anyone could operate the computer."

"NCR has the best publications cause you can go right to the book and anything that goes wrong with the machine other than a malfunction of the machine itself mechanically, you can get out of if you take your time and read it."

### Help From DSU/GSU Field Teams

"They have been down here and helped us, but none of the people have been trained with them . . . when we first started, we had problems on management. Everybody was qualified but they didn't have the practical experience."

## STORAGE ACTIVITY SUPERVISORS

### Training

"I spent 9 weeks at Ft. Lee in the Officer Basic Course and then I spent 9 weeks in a Supply and Service Officer Course. It was there that we had about 3 hours lecture on the NCR. Other than that, I have only had a short briefing for an hour here when the Assistance Team came . . . I feel for my particular job that the training I had served its purpose. It did not teach me how the machine works and what I had to do to make the machine work. However, it did teach me the functions of my storage area so that the

stock control people could actually use this machine well. However, it did not train me to actually take over in the stock control section."

### Experience

"In Korea I was in a depot as a storage specialist. Relocation and consolidation was one job. I also made reports of survey. I was there 2 years. I also worked in outside storage, ran a warehouse; and a clothing warehouse."

"NCOIC of the tech supply, PO depot, instructor inspector in the Far East command, warehouse supervisor and the receiving and shipping supervisor."

### Management Problems

"From my point of view the hardest part of the mechanized system is insuring that the figures which go into the computer from my particular section are correct because if these figures aren't the machine will actually pick up extra items which I don't have on hand or I will have one on hand and the machine will pick up less. Here again it is just all the human errors."

### Warehousing Problems

"When we get double shipments, we are sitting holding the item and nobody wants it, then we have a backlog of parts cause they are just sitting in the yard. Some of them have been sitting there for years. When I receive an item with no paper work you get a stock number, take it to the NCR 500, and they can't tell who it is issued to and who ordered it or anything else. This puts me in a tight spot where I just sit and hold the item . . . I think everybody on the machines should be school trained. The reason is if you don't know anything about the machines, you can't do the job that the machines are wanting you to do, and it's just a mess really cause you end up with zero balances and you don't know what you are doing cause the machine says its zero and you are not. I think everybody ought to be trained. Everybody who works in supply, not just individuals."

### DSU Personnel Problems

"A lot of times the supervisor has to get out and do jobs along with his people. Mainly because of your mission, supply carries a great support mission and you would like to just supervise, but I find because of the importance of the mission I have to get right in there. These guys we get straight out of school have to be supervised, you can get so much from book learning, but OJT is really needed for practical application."

### Staffing

"We have enough personnel to operate the way it is set up now under this new TO&E. We are using supply people that are trained and could be of better use other places if we had a few supply handlers and people of this type to handle supplies and let the trained personnel do the paperwork."

### Efficiency of Mechanized Stock Accounting System

"At this level it is much faster. When you have so many people involved, you are going to have a few errors, but the machine itself is fast. I think the biggest problem with the machine itself is that the people are not trained. It is like any new program. Until we get the people trained and know exactly what the capabilities are . . . Outside of the operators and supervisors, we ought to have a man work up there for a while. We should

give him a few days OJT up there before we put him in the warehouse. He should get familiar with the machine and he will understand the problems they have. By the same token, let them come down to the warehouse."

### Contact With DSU/GSU Field Teams

"This training covered everything very explicit. The NCOIC and maintenance man of the conversion team stayed 2 weeks making sure we were all well versed, and wouldn't encounter any problems . . ."

"We had a short briefing here when they first brought it in. I thought this was adequate for the people familiar with the system, but if a man wasn't familiar with it the briefing wasn't worth anything."

## WAREHOUSEMEN

### Mechanized System Training

"I would just like to get more training in the NCR 500 and about the warehouse procedures than I have now."

"Just from everybody who had worked here before. I had them explain to me how to do it."

### Repair Parts Supply Training

"I took my training at Ft. Knox, Ky. and the 76A10 supply school for general supply clerk, which is more like unit room supply. I haven't had any other special training other than when I worked in the van in Vietnam. The rest had been OJT."

"I was given about 2 weeks OJT and they did explain to me what it was all about."

"They just showed me what to do in the warehouse and that was it."

### Experience

"I was working in my tech supply and the Platoon SGT came over and offered this position in the NCR 500. I went over and was introduced to the NCOIC of the NCR 500 . . . First I was typing up file cards, sorting cards also off setting. Those are the only positions I've held. They put me on a specific job, showed me how and I did it."

### Problems

Some of these problems were expressed as follows:

"Finding the parts that are in wrong places. Looking up parts that are not where they are supposed to be, so you have to go look. That's about the only trouble I have."

"It is trying to keep the stock moving and keep it in stock when you are trying to issue it out at the same time."

### Comparison of Mechanized and Manual Stock Accounting Systems

"I think it would be a lot slower manually. The machine speeds a lot up."

"You work a lot faster and you work a lot better, it's less complicated than the manual system. The manual system is slow . . ."

"The manual procedures would take a lot longer than the NCR procedures because computers can put out a lot more work than men can put out. But they do make mistakes and errors. The manual system has fewer errors but it takes a lot longer and procedures are more dragged out."

## PLL CLERK SUPERVISORS

### Mechanized System Training

"As I recall we devoted about two days to the system . . . they hit on several other computer systems in the general computer field, and not enough on the NCR 500. I would have wanted more information."

"By watching it. By having people explain it to me. Asking questions. Saying now why is this card punched this way. How do you make it go automatic here and by them just explaining to me . . . I just went myself."

### Repair Parts Supply Training

"I had formal instruction at Ft. Lewis, briefings, and have done some reading. This was an officers class that took place at Ft. Lewis, one evening a week for six weeks last summer. Supply management was covered. We didn't get into customer support. It was above our echelon and we didn't get into repair parts supply management. I don't remember too much about it."

### Personnel Problems

"The PLL clerks make most of their errors by not keeping a close enough track on their inventories. Maybe they will have one item and will show a record of 2 items. Follow-ups are a problem for them also. If you don't get that control number and when it does come in . . . you aren't sure whether that is the right document (say you ordered the item 2 or 3 times) and you aren't sure which requisition it is. In a way it is an error in the system. If you could keep the same number all the way through instead of changing it . . ."

### Status Problems

"The follow-up is basically the thing that kills the system. Sometimes we don't get status cards back and don't get the control number that the machine cuts out. There we are with one document and the item is going to come in under another document. Sometimes guys get parts which are due to a key punch error, the wrong item. We have a lot of civilian equipment and a lot of it has just got the manufacturer's part numbers on it. The DSU gets it (the requisition) out all right, but when it gets to depot it doesn't have enough information on the card so the depot cancels them back to us."

### Reconciliations

"The last reconciliation we had was in January (approximately four months prior to this interview). Out of 900 requisitions, I could reconcile 375. According to the instructions that came with this reconciliation I should have cancelled the other 500 requisitions. But I know I had those requisitions in, somewhere between here and the DSU they must have got lost. We took the reconciliation back to them, asked for another one and never received it."

### Requisitions

"There are some times that we don't have enough prepunch cards for . . . because we order it so frequently that the kickback of the prepunch cards is not fast enough. At the present time we are lacking about 100 or more cards."

"A lot of the prepunched information is in error and the printouts. I have to constantly straighten it out."

### Comparison of Mechanized and Manual Systems

"I think it is a much better system than the manual system once they have the people trained to use the system as it is supposed to be used. I think it will work very well."

"I feel it cuts down quite a bit of the paper work. If the status cards are received back in time, they give you good information of the status of your parts."

"I think it's probably far more efficient than a manual system. The problem that I have seen is the people that are putting the input material into the NCR 500. You have the soldier who could care less about how he performs his job. He's going to make mistakes. He's not going to be nearly as accurate as someone who perhaps runs the NCR 500 in a civilian occupation. The mistakes drastically hinder what it is capable of doing. But now, even with this hindrance, I think it is far more efficient than what a normal soldier would do manually."

## PLL CLERKS

### Training

"In my primary MOS, 31 ECHO, they gave us approximately 31 hours on requisitioning parts and PLL . . . not very much at all. Most of it has been OJT. I haven't had any special classes or anything like that. Most of that training was the very basics like it told us about stock numbers and what each section of the stock number meant. The 59-60's were mostly transistors and things like this. They talked a lot about the parts manuals, 1158-05. They told us how to make the requisitions from the station to the PLL itself. We did get some handouts."

". . . from people around me, and checked through TM's and AR's, just more or less self-taught, there was one PLL clerk here who taught me."

"I was just taken around and shown what to do."

### Status Card Problems

"We might get a few I can't figure out. When I get them, I take them over to the DSU and they fill me in on it. All the numbers might be stuck together and I can't really separate them. When I get the stock number, I can usually figure it out from there, but sometimes . . . I guess they must be messed up from the other unit."

### Record Keeping Problems

"Keeping files straight. Trying to determine the codes on the cards."

"Right now it would be keeping the PLL straight . . . keeping the proper entries in. Anytime we order a part or a part is taken out of the PLL, one has to be requisitioned for it to replace it. In a day's time you could have 5 or 6 of the same item which means you have to make 5 or 6 different orders."

### Efficiency of the NCR 500 System

"It makes the work a lot easier on everybody. With the computerized card all you have to do is pull it out. If you have a key punch, you can just key punch it on to the card. Then you send the card in and they run it through the computer. We have gotten double quite a few items that we have had to send back. Sometimes they may send stuff on the old card and on the new card. They might just have the wrong item or something. It does have a lot of advantages when they get it fully set up."

## Appendix C

# SURVEY DATA SUMMARIZED ACROSS NINE DUTY POSITIONS

### LEGEND

| Category | Duty positions included |
|---|---|
| DSU Management | TSO, platoon sergeant, stock accounting NCO's. |
| Total Management | DSU management and battalion management. |
| Total Warehouse | Storage activity supervisors, warehousemen. |
| Total DSU | DSU management, total warehouse, and operators. |
| Total Support | Battalion management, TSO, platoon sergeant, stock accounting NCO's, operators, storage activity supervisors and warehousemen. |
| Total Customers | PLL clerk supervisors and PLL clerks. |
| Grand Total | Total support and total customers. |

Table C-1

**Relationship of Primary or Secondary MOS to Duty MOS (Percent)**

| Personnel | Identical to Duty | Related to Duty | Not Related | Not Applicable |
|---|---|---|---|---|
| Battalion Management (*N* = 16) | | | | |
| Primary MOS | 38 | 44 | 0 | 0 |
| Secondary MOS | 12 | 6 | | |
| TSO (*N* = 11) | | | | |
| Primary MOS | 9 | 45 | 18 | 9 |
| Secondary MOS | 9 | 9 | | |
| Platoon SGT (*N* = 6) | | | | |
| Primary MOS | 67 | 33 | 0 | 0 |
| Secondary MOS | 0 | 0 | | |
| Stock Accounting NCO (*N* = 14) | | | | |
| Primary MOS | 79 | 7 | 7 | 0 |
| Secondary MOS | 7 | 0 | | |
| Operators (*N* = 10) | | | | |
| Primary MOS | 80 | 10 | 10 | 0 |
| Secondary MOS | 0 | 0 | | |
| Warehouse Supervisor (*N* = 7) | | | | |
| Primary MOS | 43 | 43 | 0 | 0 |
| Secondary MOS | 14 | 0 | | |
| Warehousemen (*N* = 8) | | | | |
| Primary MOS | 63 | 13 | 25 | 0 |
| Secondary MOS | 0 | 0 | | |
| PLL Clerk Supervisor (*N* = 22) | | | | |
| Primary MOS | 86 | 14 | 0 | 0 |
| Secondary MOS | 0 | 0 | | |
| PLL Clerks (*N* = 34) | | | | |
| Primary MOS | 47 | 6 | 21 | 24 |
| Secondary MOS | 3 | 0 | | |
| DSU Management (*N* = 31) | | | | |
| Primary MOS | 52 | 26 | 10 | 3 |
| Secondary MOS | 6 | 3 | | |
| Total Management (*N* = 47) | | | | |
| Primary MOS | 47 | 32 | 6 | 2 |
| Secondary MOS | 9 | 4 | | |
| Total Customer (*N* = 56) | | | | |
| Primary MOS | 63 | 9 | 13 | 14 |
| Secondary MOS | 2 | 0 | | |

*(Continued)*

Table C-1 *(Continued)*

**Relationship of Primary or Secondary MOS to Duty MOS (Percent)**

| Personnel | Identical to Duty | Related to Duty | Not Related | Not Applicable |
|---|---|---|---|---|
| Total DSU (*N* = 56) | | | | |
| Primary MOS | 57 | 23 | 11 | 2 |
| Secondary MOS | 5 | 2 | | |
| Grand Total (*N* = 128) | | | | |
| Primary MOS | 57 | 20 | 10 | 7 |
| Secondary MOS | 5 | 2 | | |
| Total Support (*N* = 72) | | | | |
| Primary MOS | 53 | 28 | 8 | 1 |
| Secondary MOS | 7 | 3 | | |
| Total Warehouse (*N* = 15) | | | | |
| Primary MOS | 53 | 27 | 0 | 0 |
| Secondary MOS | 7 | 0 | 13 | 0 |

Table C-2

**Average Number of Months on the Job**

| Personnel | *N* | Average Time on Job (months) |
|---|---|---|
| Battalion Management | 16 | 5.6 |
| TSO | 11 | 4.9 |
| Platoon SGT | 6 | 5.3 |
| Stock Accounting NCO | 14 | 8.3 |
| Operator | 10 | 4.3 |
| Warehouse Supervisor | 7 | 5.0 |
| Warehousemen | 8 | 8.2 |
| Total Support | 72 | 6.0 |
| PLL Clerk Supervisor | 22 | 6.1 |
| PLL Clerk | 34 | 6.3 |
| Total Customer | 56 | 6.2 |
| GRAND TOTAL | 128 | 6.1 |
| DSU Management | 31 | 6.5 |
| Total Management | 47 | 6.2 |
| Total DSU | 56 | 6.1 |
| Total Customer | | 6.2 |
| Grand Total | | 6.1 |
| Total Support | | 6.0 |
| Total Warehouse | 15 | 6.7 |

Table C-3

## Formal and Informal Mechanized Stock Accounting System Training (Percent)

| Type of Training | Bn Mgt N=16 | TSO N=11 | Plt Sgt N=6 | Stock Acct NCO N=14 | Opr N=10 | Whse Super N=7 | Whse N=8 | PLL Clk Super N=22 | PLL Clk N=34 | DSU Mgt N=31 | Tot Mgt N=47 | Tot Whse N=15 | Tot DSU N=56 | Tot Supp N=72 | Tot Cust N=56 | Grand Total N=128 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Formal Training | | | | | | | | | | | | | | | | |
| Quartermaster School | 6 | 18 | 33 | 50 | 80 | 14 | 0 | 14 | 9 | 35 | 26 | 7 | 36 | 29 | 11 | 21 |
| Ordnance School | 12 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 11 | 0 | 5 | 7 | 0 | 4 |
| DSU/GSU Field Team | 25 | 18 | 17 | 14 | 0 | 0 | 0 | 0 | 0 | 16 | 19 | 0 | 9 | 13 | 0 | 7 |
| Field Training | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 2 |
| Conversion | 25 | 18 | 0 | 7 | 0 | 57 | 13 | 0 | 9 | 10 | 23 | 33 | 14 | 17 | 5 | 12 |
| Total Training | 62 | 73 | 50 | 64 | 80 | 57 | 13 | 23 | 18 | 65 | 64 | 33 | 59 | 60 | 20 | 42 |
| No Training | 38 | 27 | 50 | 36 | 20 | 43 | 87 | 77 | 82 | 35 | 36 | 67 | 41 | 40 | 80 | 58 |
| Informal Training | 62 | 100 | 83 | 86 | 100 | 29 | 37 | 77 | 15 | 90 | 81 | 33 | 77 | 74 | 39 | 59 |
| No Informal Training | 38 | 0 | 17 | 14 | 0 | 71 | 63 | 23 | 85 | 10 | 19 | 67 | 23 | 26 | 61 | 41 |

Table C-4

## Formal, Informal, and Combined Mechanized Stock Accounting System Training (Percent)

| Type of Training | Bn Mgt N=16 | TSO N=11 | Plt Sgt N=6 | Stock Acct NCO N=14 | Opr N=10 | Whse Super N=7 | Whse N=8 | PLL Clk Super N=22 | PLL Clk N=34 | DSU Mgt N=31 | Tot Mgt N=47 | Tot Whse N=15 | Tot DSU N=56 | Tot Supp N=72 | Tot Cust N=56 | Grand Total N=128 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Formal | 38 | 0 | 17 | 14 | 0 | 57 | 13 | 9 | 18 | 10 | 19 | 33 | 14 | 19 | 14 | 17 |
| Informal | 38 | 27 | 50 | 36 | 20 | 29 | 37 | 63 | 15 | 35 | 36 | 33 | 32 | 33 | 34 | 34 |
| Combined | 24 | 73 | 33 | 50 | 80 | 0 | 0 | 14 | 0 | 55 | 45 | 0 | 45 | 40 | 5 | 25 |
| No Training | 0 | 0 | 0 | 0 | 0 | 14 | 50 | 14 | 67 | 0 | 0 | 33 | 9 | 7 | 47 | 24 |

Table C-5

**Prior Mechanized Stock Accounting System Experience**
**(Percent)**

| | Bn Mgt N=16 | TSO N=11 | Plt Sgt N=6 | Stock Acct NCO N=14 | Opr N=10 | Whse Super N=7 | Whse N=8 | PLL Clk Super N=22 | PLL Clk N=34 | DSU Mgt N=31 | Tot Mgt N=47 | Tot Whse N=15 | Tot DSU N=56 | Tot Supp N=72 | Tot Cust N=56 | Grand Total N=128 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yes | 0 | 27 | 33 | 79 | 0 | 14 | 13 | 14 | 0 | 52 | 34 | 13 | 32 | 25 | 5 | 16 |
| No | 100 | 73 | 67 | 21 | 100 | 86 | 87 | 86 | 100 | 48 | 66 | 87 | 68 | 75 | 95 | 84 |

Table C-6

**Mechanized Stock Accounting System Training Needs**
**(Percent)**

| | Bn Mgt N=16 | TSO N=11 | Plt Sgt N=6 | Stock Acct NCO N=14 | Opr N=10 | Whse Super N=7 | Whse N=8 | PLL Clk Super N=22 | PLL Clk N=34 | DSU Mgt N=31 | Tot Mgt N=47 | Tot Whse N=14 | Tot DSU N=56 | Tot Supp N=72 | Tot Cust N=56 | Grand Total N=128 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fundamentals | 81 | 82 | 33 | 14 | 30 | 43 | 25 | 14 | 9 | 42 | 55 | 33 | 38 | 47 | 11 | 31 |
| PN and Functions | 19 | 64 | 17 | 7 | 10 | 14 | 0 | 0 | 0 | 29 | 26 | 7 | 20 | 19 | 0 | 11 |
| Management | 38 | 72 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 29 | 32 | 0 | 16 | 21 | 0 | 12 |
| Status | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 1 |
| Codes | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 9 | 0 | 0 | 0 | 7 | 2 | 1 | 4 | 3 |
| Punches in Cards | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 3 | 0 | 0 | 7 | 2 | 1 | 2 | 2 |
| Total Needs | 81 | 82 | 33 | 14 | 30 | 57 | 25 | 23 | 12 | 42 | 55 | 40 | 39 | 49 | 16 | 34 |
| No Needs | 19 | 18 | 67 | 86 | 70 | 43 | 75 | 77 | 88 | 58 | 45 | 60 | 61 | 51 | 84 | 66 |

Table C-7

## Formal Repair Parts Supply Training
## (Percent)

| | Bn Mgt *N*=16 | TSO *N*=11 | Plt Sgt *N*=6 | Stock Acct NCO *N*=14 | Opr *N*=10 | Whse Super *N*=7 | Whse *N*=8 | PLL Clk Super *N*=22 | PLL Clk *N*=34 | DSU Mgt *N*=31 | Tot Mgt *N*=47 | Tot Whse *N*=15 | Tot DSU *N*=56 | Tot Supp *N*=72 | Tot Cust *N*=56 | Grand Total *N*=128 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Quartermaster School | 19 | 27 | 50 | 79 | 80 | 43 | 13 | 9 | 32 | 55 | 43 | 27 | 52 | 44 | 23 | 35 |
| Signal School | 6 | 9 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 3 | 4 | 0 | 2 | 3 | 2 | 5 |
| Transportation School | 12 | 18 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 10 | 11 | 0 | 5 | 7 | 0 | 9 |
| Ordnance School | 44 | 55 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 19 | 28 | 7 | 13 | 19 | 0 | 11 |
| General Supply School | 0 | 0 | 17 | 22 | 0 | 14 | 37 | 9 | 13 | 13 | 9 | 27 | 14 | 11 | 11 | 11 |
| NCO Logistics Program | 0 | 0 | 0 | 7 | 0 | 28 | 0 | 0 | 0 | 3 | 2 | 13 | 5 | 4 | 0 | 5 |
| Field Training | 25 | 9 | 0 | 14 | 0 | 57 | 0 | 23 | 15 | 10 | 15 | 27 | 13 | 15 | 18 | 16 |
| Other | 19 | 18 | 0 | 0 | 0 | 14 | 0 | 9 | 3 | 6 | 11 | 7 | 5 | 8 | 5 | 7 |
| Total Training | 94 | 91 | 67 | 86 | 80 | 100 | 63 | 54 | 59 | 84 | 87 | 80 | 82 | 85 | 57 | 73 |
| No Training | 6 | 9 | 33 | 14 | 20 | 0 | 37 | 46 | 41 | 16 | 13 | 20 | 18 | 15 | 43 | 27 |

Table C-8

## Repair Parts Supply Experience (Percent)

| | Bn Mgt *N*=16 | TSO *N*=11 | Plt Sgt *N*=6 | Stock Acct NCO *N*=14 | Opr *N*=10 | Whse Super *N*=7 | Whse *N*=8 | PLL Clk Super *N*=22 | PLL Clk *N*=34 | DSU Mgt *N*=31 | Tot Mgt *N*=47 | Tot Whse *N*=15 | Tot DSU *N*=56 | Tot Supp *N*=72 | Tot Cust *N*=56 | Grand Total *N*=128 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unit | 12 | 0 | 17 | 7 | 0 | 43 | 13 | 14 | 6 | 6 | 9 | 27 | 11 | 11 | 9 | 10 |
| Property Book | 6 | 0 | 0 | 7 | 0 | 0 | 0 | 9 | 0 | 3 | 4 | 0 | 2 | 3 | 4 | 3 |
| Tech Supply | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 6 | 4 | 0 | 4 | 3 | 0 | 1 |
| Repair Parts | 31 | 9 | 33 | 7 | 0 | 43 | 0 | 4 | 6 | 13 | 19 | 20 | 13 | 17 | 5 | 12 |
| Maintenance | 56 | 9 | 0 | 0 | 0 | 0 | 0 | 59 | 0 | 3 | 21 | 0 | 2 | 14 | 23 | 18 |
| Depot | 0 | 0 | 0 | 22 | 0 | 54 | 0 | 4 | 1 | 10 | 6 | 27 | 13 | 10 | 4 | 7 |
| Warehouse | 6 | 9 | 67 | 0 | 0 | 54 | 0 | 0 | 0 | 16 | 13 | 27 | 16 | 14 | 0 | 8 |
| Inventory Control Point | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 3 | 0 | 1 |
| Direct Support Unit | 24 | 27 | 17 | 86 | 0 | 43 | 13 | 0 | 0 | 52 | 43 | 27 | 36 | 33 | 0 | 19 |
| Mechanized Supply | 6 | 0 | 33 | 14 | 0 | 14 | 0 | 4 | 0 | 13 | 11 | 7 | 9 | 8 | 2 | 5 |
| Ammunition Supply | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 1 |
| Total Experience | 100 | 55 | 87 | 100 | 0 | 86 | 25 | 86 | 12 | 81 | 87 | 53 | 59 | 68 | 41 | 56 |
| No Experience | 0 | 45 | 17 | 0 | 100 | 14 | 75 | 14 | 88 | 19 | 13 | 47 | 41 | 32 | 59 | 44 |

Table C-9

**Mechanized Stock Accounting System Management Problems (Percent)**

| Problem | Bn Mgt *N*=16 | TSO *N*=11 | Plt Sgt *N*=6 | Stock Acct NCO *N*=14 | Whse Super *N*=7 | DSU Mgt *N*=31 | Tot Mgt *N*=47 |
|---|---|---|---|---|---|---|---|
| Coordination of Mechanized Stock Accounting System | 50 | 91 | 50 | 50 | 0 | 65 | 60 |
| Code | 56 | 54 | 50 | 71 | 0 | 61 | 60 |
| Workload | 50 | 54 | 0 | 42 | 0 | 39 | 43 |
| Stock Accounting and Warehouse | 0 | 0 | 0 | 50 | 57 | 23 | 15 |
| Total | 100 | 91 | 67 | 93 | 57 | 87 | 91 |
| No Management Problems | 0 | 9 | 33 | 7 | 43 | 13 | 9 |

Table C-10

**Warehousing Problems (Percent)**

| Problem | Bn Mgt *N*=16 | TSO *N*=11 | Plt Sgt *N*=6 | Stock Acct NCO *N*=14 | Opr *N*=10 | Whse Super *N*=7 | Whse *N*=8 | DSU Mgt *N*=31 | Tot Mgt *N*=47 | Tot Whse *N*=15 | Tot DSU *N*=56 | Tot Supp *N*=72 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Receiving | 12 | 0 | 17 | 7 | 10 | 43 | 0 | 6 | 9 | 20 | 11 | 11 |
| Stock Location | 56 | 54 | 67 | 64 | 60 | 29 | 13 | 61 | 60 | 20 | 50 | 51 |
| Stock Balance | 12 | 36 | 33 | 36 | 20 | 71 | 0 | 35 | 28 | 33 | 32 | 28 |
| Issuing | 6 | 9 | 17 | 7 | 0 | 14 | 0 | 10 | 9 | 7 | 7 | 7 |
| Document Flow | 0 | 0 | 0 | 0 | 0 | 0 | 77 | 0 | 0 | 20 | 5 | 4 |
| Other | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 0 | 13 | 4 | 3 |
| TOTAL | 75 | 73 | 67 | 71 | 70 | 71 | 63 | 71 | 72 | 67 | 70 | 71 |
| No Problems | 25 | 27 | 33 | 29 | 30 | 29 | 37 | 29 | 28 | 33 | 30 | 29 |

Table C-11

## Problems with DSU Personnel (Percent)

| Problem | Bn Mgt *N*=16 | TSO *N*=11 | Plt Sgt *N*=6 | Stock Acct NCO *N*=14 | Whse Super *N*=7 | DSU Mgt *N*=31 | Total *N*=54 |
|---|---|---|---|---|---|---|---|
| Managers | 94 | 10 | 17 | 57 | 0 | 65 | 65 |
| Train in Supply | 38 | 55 | 67 | 50 | 71 | 55 | 52 |
| Train in Storage | 25 | 55 | 33 | 36 | 43 | 42 | 37 |
| Turnover | 25 | 36 | 33 | 22 | 0 | 29 | 24 |
| Initiative Motivation | 50 | 18 | 33 | 29 | 0 | 26 | 30 |
| Total Problems | 100 | 91 | 100 | 86 | 71 | 90 | 91 |
| No Problems | 0 | 9 | 0 | 14 | 29 | 10 | 9 |

Table C-12

**Problems with Customers**
**(Percent)**

| Problem | Bn Mgt *N*=16 | TSO *N*=11 | Plt Sgt *N*=6 | Stock Acct NCO *N*=14 | Opr *N*=10 | DSU Mgt *N*=31 | Total *N*=57 |
|---|---|---|---|---|---|---|---|
| Incorrect requisitions | 0 | 9 | 33 | 14 | 20 | 16 | 12 |
| Prepunched requisitions not used | 25 | 36 | 50 | 22 | 80 | 32 | 39 |
| Prepunched requisitions received in damaged state | 0 | 27 | 50 | 22 | 20 | 29 | 19 |
| PLL's not furnished or updated | 25 | 45 | 17 | 57 | 10 | 45 | 33 |
| Status not understood | 31 | 36 | 17 | 42 | 20 | 35 | 32 |
| Lost documents | 13 | 18 | 0 | 14 | 20 | 13 | 14 |
| Abuse of priorities | 13 | 18 | 17 | 7 | 0 | 13 | 11 |
| Lack of agreement between customer records and DSU records | 13 | 18 | 0 | 22 | 0 | 16 | 12 |
| PLL clerks not trained | 0 | 27 | 17 | 14 | 30 | 19 | 16 |
| Customer complaints: requisitions not filled | 0 | 27 | 0 | 0 | 0 | 10 | 5 |
| Other | 13 | 18 | 0 | 22 | 10 | 16 | 14 |
| Total respondents mentioning customer problems | 75 | 91 | 83 | 100 | 90 | 94 | 88 |
| No problems with customers mentioned | 25 | 9 | 17 | 0 | 10 | 6 | 12 |

Table C-14

**Attitudes Toward Efficiency of the Mechanized Stock Accounting System**
**(Percent)**

| | Bn Mgt N=16 | TSO N=11 | Plt Sgt N=6 | Stock Acct NCO N=14 | Opr N=10 | Whse Super N=7 | Whse N=8 | PLL Clk Super N=22 | PLL Clk N=34 | DSU Mgt N=31 | Tot Mgt N=47 | Tot Whse N=15 | Tot DSU N=56 | Tot Supp N=72 | Tot Cust N=56 | Grand Total N=128 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Efficient | 31 | 18 | 0 | 57 | 50 | 57 | 37 | 27 | 26 | 32 | 32 | 47 | 39 | 38 | 27 | 33 |
| Inefficient | 19 | 9 | 17 | 0 | 10 | 14 | 0 | 0 | 0 | 6 | 11 | 7 | 7 | 10 | 0 | 5 |
| Both | 50 | 55 | 83 | 43 | 40 | 29 | 50 | 41 | 15 | 55 | 53 | 40 | 48 | 49 | 25 | 38 |
| No Comment | 0 | 18 | 0 | 0 | 0 | 0 | 13 | 32 | 59 | 6 | 4 | 7 | 5 | 4 | 48 | 23 |
| Total | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

Table C-15

**Mechanized Stock Accounting System Compared to Manual System**
**(Percent)**

| | Bn Mgt N=16 | TSO N=11 | Plt Sgt N=6 | Stock Acct NCO N=14 | Opr N=10 | Whse Super N=7 | Whse N=8 | PLL Clk Super N=22 | PLL Clk N=34 | DSU Mgt N=31 | Tot Mgt N=47 | Tot Whse N=15 | Tot DSU N=56 | Tot Supp N=72 | Tot Cust N=56 | Grand Total N=128 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| More efficient | 75 | 82 | 67 | 86 | 70 | 86 | 74 | 68 | 21 | 81 | 79 | 80 | 79 | 78 | 39 | 61 |
| Less efficient | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 7 | 2 | 1 | 0 | 1 |
| No Comment | 25 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 13 | 0 | 4 | 8 | 0 | 5 |
| Unable to Compare | 0 | 0 | 33 | 14 | 30 | 0 | 26 | 32 | 79 | 13 | 9 | 13 | 16 | 13 | 61 | 34 |
| Total | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

Table C-16

## Manual Stock Accounting System Advantages Over Mechanized Stock Accounting System (Percent)

| | Bn Mgt *N*=16 | TSO *N*=11 | Plt Sgt *N*=6 | Stock Acct NCO *N*=14 | Opr *N*=10 | Whse Super *N*=7 | Whse *N*=8 | PLL Clk Super *N*=22 | PLL Clk *N*=34 | DSU Mgt *N*=31 | Tot Mgt *N*=47 | Tot Whse *N*=15 | Tot DSU *N*=56 | Tot Supp *N*=72 | Tot Cust *N*=56 | Grand Total *N*=128 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A[a] | 19 | 9 | 0 | 0 | 0 | 29 | 0 | 0 | 0 | 3 | 9 | 13 | 5 | 8 | 0 | 5 |
| B | 13 | 9 | 0 | 7 | 10 | 14 | 0 | 0 | 6 | 6 | 9 | 7 | 7 | 8 | 4 | 6 |
| C | 13 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 2 | 4 | 0 | 2 |
| D | 0 | 18 | 17 | 0 | 0 | 29 | 0 | 0 | 0 | 10 | 6 | 13 | 9 | 7 | 0 | 4 |
| E | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 7 | 2 | 1 | 0 | 1 |
| F | 0 | 0 | 0 | 0 | 0 | 14 | 13 | 0 | 0 | 0 | 0 | 13 | 4 | 3 | 0 | 2 |
| G | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 7 | 2 | 1 | 0 | 1 |
| H | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 |
| No Comment | 63 | 73 | 83 | 93 | 80 | 43 | 87 | 95 | 94 | 84 | 77 | 67 | 79 | 75 | 95 | 84 |
| Total Comments | 37 | 27 | 17 | 7 | 20 | 57 | 13 | 5 | 6 | 16 | 23 | 33 | 21 | 25 | 5 | 16 |
| Total | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

[a]A - Data more accessible
B - No equipment to break down
C - Errors not perpetrated as they are in mechanized system
D - Work backlog easier to handle
E - Easier system for local nationals to learn
F - More accurate than NCR 500
G - Less work required of storage activity
H - Manual system costs less

Table C-17

**Attitudes Toward Mechanized Stock Accounting System Publications (Percent)**

| | Bn Mgt *N*=16 | TSO *N*=11 | Plt Sgt *N*=6 | Stock Acct NCO *N*=14 | Opr *N*=10 | Total *N*=57 |
|---|---|---|---|---|---|---|
| Easy to use | 25 | 45 | 50 | 71 | 50 | 47 |
| Not easy to use | 6 | 9 | 0 | 7 | 30 | 11 |
| Have both easy and difficult to use factors | 19 | 27 | 17 | 0 | 10 | 14 |
| No comment | 50 | 18 | 33 | 22 | 10 | 28 |
| Total respondents | 50 | 82 | 67 | 78 | 90 | 72 |
| Total | 100 | 100 | 100 | 100 | 100 | 100 |

Table C-18

**Career Intentions (Percent)**

| | TSO *N*=11 | Plt Sgt *N*=6 | Stock Acct NCO *N*=14 | Opr *N*=10 | Total *N*=41 |
|---|---|---|---|---|---|
| Will leave Army | 73 | 100 | 57 | 9 | 76 |
| Not decided | 18 | 0 | 7 | 10 | 10 |
| Career soldier | 9 | 0 | 14 | 0 | 7 |
| Did not say | 0 | 0 | 22 | 0 | 7 |
| TOTAL | 100 | 100 | 100 | 100 | 100 |

Assume "had not decided" and "did not say" as evenly divided:

| | | |
|---|---|---|
| Will leave Army | 31 + 3.5 = 34.5 | 84.0 |
| Career Soldier | 3 + 3.5 = 6.5 | 16.0 |
| | | 100.0 |

Divide "not decided" and "did not say" in same ratio as "will leave Army" to "career soldier"

| | | |
|---|---|---|
| Will leave Army | 31 + 6 = 37 | 90.0 |
| Career soldier | 3 + 1 = 4 | 10.0 |

Table C-19

## Contact With Computer Systems Command DSU/GSU Field Teams and Type of Assistance Received (Percent)

| | Bn Mgt *N*=16 | TSO *N*=11 | Plt Sgt *N*=6 | Stock Acct NCO *N*=14 | Opr *N*=10 | Whse Super *N*=7 | Whse *N*=8 | DSU Mgt *N*=38 | Tot Mgt *N*=54 | Total *N*=72 |
|---|---|---|---|---|---|---|---|---|---|---|
| Contact | | | | | | | | | | |
| Yes | 100 | 100 | 87 | 93 | 60 | 71 | 25 | 89 | 93 | 81 |
| No | 0 | 0 | 13 | 7 | 40 | 29 | 75 | 11 | 7 | 19 |
| Satisfied | 81 | | 67 | 78 | 50 | 43 | 0 | 74 | 76 | 64 |
| Not Satisfied | 0 | | 0 | 0 | 0 | 29 | 0 | 8 | 6 | 4 |
| No Comment | 19 | 0 | 33 | 22 | 50 | 29 | 100 | 18 | 19 | 32 |
| Type of Assistance | | | | | | | | | | |
| Inspection and Evaluation | 75 | 82 | 50 | 64 | 40 | 29 | 0 | 61 | 65 | 54 |
| Maintenance | 44 | 72 | 17 | 42 | 0 | 0 | 0 | 39 | 41 | 31 |
| System Procedures | 56 | 64 | 50 | 64 | 40 | 0 | 0 | 50 | 52 | 44 |
| Training | 6 | 18 | 17 | 0 | 0 | 0 | 0 | 8 | 7 | 6 |
| Conversion | 19 | 27 | 33 | 29 | 10 | 57 | 0 | 34 | 30 | 24 |
| TOTAL COMMENTING | 100 | 100 | 87 | 93 | 60 | 71 | 0 | 89 | 93 | 78 |
| No Comment | 0 | 0 | 13 | 7 | 40 | 29 | 100 | 11 | 7 | 22 |
| TOTAL | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

Unclassified

Security Classification

**DOCUMENT CONTROL DATA - R & D**

*(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)*

1. ORIGINATING ACTIVITY *(Corporate author)*
Human Resources Research Organization (HumRRO)
300 North Washington Street
Alexandria, Virginia 22314

2a. REPORT SECURITY CLASSIFICATION
Unclassified

2b. GROUP

3. REPORT TITLE
TRAINING IN MECHANIZED STOCK ACCOUNTING SYSTEMS IN ARMY LOGISTICS

4. DESCRIPTIVE NOTES *(Type of report and inclusive dates)*
Final Report

5. AUTHOR(S) *(First name, middle initial, last name)*
Herbert B. Leedy

6. REPORT DATE
May 1972

7a. TOTAL NO. OF PAGES
135

7b. NO. OF REFS

8a. CONTRACT OR GRANT NO.
DAHC 19-70-C-0012

b. PROJECT NO.
2Q062107A712

c.

d.

9a. ORIGINATOR'S REPORT NUMBER(S)
HumRRO TR 72-16

9b. OTHER REPORT NO.(S) *(Any other numbers that may be assigned this report)*

10. DISTRIBUTION STATEMENT
Approved for public release; distribution unlimited.

11. SUPPLEMENTARY NOTES
Work Unit ACCOUNT: HumRRO Division No. 1 (System Operations), Alexandria, Virginia

12. SPONSORING MILITARY ACTIVITY
Office, Chief of Research and Development
Department of the Army
Washington, D.C. 20310

13. ABSTRACT

Army experience with a small mechanized stock accounting system, the NCR 500, was studied with respect to personnel and training, in order to improve implementation of newer and more complex computer-based logistics systems. Officers and enlisted personnel in various duty positions connected with NCR 500 systems in four Far Eastern commands were interviewed. Data showed there had been a continual input of underskilled personnel into nearly all of the duty positions in the mechanized stock accounting system and at its major interfaces. Interviews indicated that efficiency would have been promoted by (a) integrating NCR 500 procedures and concepts with repair parts supply procedures and concepts, (b) a total systems approach to training, (c) upgrading the storage operation as well as the supporting stock accounting system, (d) assigning more well-qualified technical supply officers, and (e) training in the NCR 500 system for more noncommissioned officers with repair parts supply experience.

DD FORM 1 NOV 65 1473

Unclassified

Security Classification

| 14. KEY WORDS | LINK A | | LINK B | | LINK C | |
|---|---|---|---|---|---|---|
| | ROLE | WT | ROLE | WT | ROLE | WT |
| Automatic data processing | | | | | | |
| Computer personnel | | | | | | |
| Computer systems | | | | | | |
| Electronic accounting machines | | | | | | |
| General support/direct support | | | | | | |
| Logistics operations | | | | | | |
| Maintenance battalion | | | | | | |
| Management problems | | | | | | |
| Personnel turnover | | | | | | |
| Repair parts supply | | | | | | |
| Specialized training | | | | | | |
| Stock levels | | | | | | |

# DISTRIBUTION LIST

2 DIR OASD MANPOWER (PP&GR)
1 CHF DEF NUC AGCY ATTN DCC LIB BR
1 DIR OASD MANPOWER & RESERVE AFFAIRS
2 NASA SCI & TECH INFO FACILITY COLLEGE PARK MD
1 CINC US EUROPEAN COMD ATTN SUPPORT PLANS BR J3
1 CINC USA PACIFIC ATTN G3 CDC APO SAN FRAN 96610
1 CG US ARMY JAPAN APO 96343 SAN FRAN ATTN G3
10 CG USA FORCES SOUTHERN COMD ATTN SCARCD CZ
2 CG US ARMY EUROPE APO 09403 NY ATTN OPNS DIV
1 CG USA AD COMD ENT AFB ATTN ADGPA COLO
6 CG 1ST ARMY ATTN DCSOT FT MEADE MD
1 CG 3RD ARMY ATTN DCSOT FT MCPHERSON
4 CG SIXTH ARMY PRES OF SAN FRAN ATTN AMUPS-T2
1 DIR HEL APG MD
1 CG USA CDC EXPERIMENTATION COMD FT ORD
2 ENGNR PSYCHOL LAB PIONEERING RES DIV ARMY NATICK LABS NATICK MASS
4 TECH LIB ARMY NATICK LABS NATICK MASS
2 INST OF LAND CMT ATTN TECH LIB FT BELVOIR VA
1 REDSTONE SCIENTIFIC INFC CTR US ARMY MSL COMD ATTN CHF DOC SEC ALA
1 CO FT HUACHUCA SPT COMD USA ATTN TECH REF LIB
1 SIXTH USA LIB DEPOT BLDG M 13 14 PRES OF SAN FRAN
1 PLNS OFCR PSYCH HDQTRES USACDCEC FT ORD
1 DIR WALTER REED ARMY INST OF RES WALTER REED ARMY MED CTR
1 DIR WRAIR WALTER REED ARMY MED CTR ATTN NEUROPSYCHIAT DIV
1 CO HQ ARMY ENLISTED EVAL CTR FT BENJ HARRISON
1 TECH LIB BOX 22 USACDC EXPERIMENTATION COMD FT ORD
1 CO FRANKFORD ARSNL ATTN SMUFA-N6400/202-4 PA
1 4TH ARMY MSL COMD AIR TRANSPORTABLE SAN FRAN
1 REF M MS IS NASA ALA
1 CO USA CBT DEVEL COMD TRANS AGCY FT EUSTIS
1 CO ARMY CDC ARMOR AGY FT KNOX
1 CO US ARMY CDC AVN AGCY FT RUCKER
1 CG USA TNG CTR & FT LEONARD WOOD ATTN ACOFS G3
1 CG USA INF CTR ATTN AJIGT-T FT BENNING
1 CG USA TNG CTR INF ATTN ACOFS G3 FT DIX
1 CG USA TNG CTR ATTN ACOFS G3 FT JACKSON
1 CG USA TNG CTR INF ATTN ACOFS G3 FT LEWIS
1 CG USA TNG CTR INF & FT ORD ATTN ACOFS G3
61 CG USA TNG CTR INF ATTN ACOFS G3 FT POLK
20 CG USA AD CTR ATTN G3 FT BLISS
1 CG USA TNG CTR INF ATTN ACOFS G3 FT CAMPBELL
3 LIB ARMY WAR COLL CARLISLE BKS
1 US MILIT ACAD WEST POINT ATTN LIB
1 COMDT ARMY AVN SCH ATTN DIR OF INSTR FT RUCKER
2 COMDT ARMY SECUR AGY TNG CTR + SCH FT DEVENS ATTN LIB
1 STIMSON LIB MED FLD SERV SCH BROOKE ARMY MED CTR FT SAM HOUSTON
10 COMDT THE ARMOR SCH ATTN DOI FT KNOX
1 LIB USA ARMOR SCH FT KNOX
1 COMDT ARMY CHEM CORPS SCH FT MCCLELLAN ATTN EDUC ADV
1 COMDT USAIS ATTN AJIIS-D-EPRD FT BENNING
2 COMDT US ARMY SOUTHEASTERN SIG SCH ATTN EDUC ADV FT GORDON
1 COMDT USA AD SCH ATTN DOI FT BLISS
5 ASST COMDT ARMY AIR DEF SCH FT BLISS ATTN CLASSF TECH LIB
3 CG USA FLD ARTY CTR & FT SILL ATTN AVN OFCR
1 COMDT ARMED FORCES STAFF COLL NORFOLK
1 COMDT JUDGE ADVOCATE GENERALS SCH U OF VA
1 OPTY COMDT USA AVN SCH ELEMENT GA
1 OPTY ASST COMDT USA AVN SCH ELEMENT GA
1 USA AVN SCH ELEMENT OFC OF DIR OF INSTR ATTN EDUC ADV GA
1 EDUC CONSLT ARMY MILIT POLICE SCH FT GORDON
6 COMDT USA ENGR SCH ATTN EDUC ADV, AHBBES-EA FT BELVOIR
1 DIR OF INSTR US MIL ACAD WEST POINT NY
1 USA INST FOR MIL ASSIST ATTN LIB BLDG 1ST2808 FT BRAGG
4 USA INST FOR MIL ASSIST ATTN COUNTERINSURGENCY DEPT FT BRAGG
1 COMDT DEF MGT SCH FT BELVOIR
2 COMDT USA MSL & MUN CTR & SCH ATTN CHF OFC OF OPS REDSTONE ARSNL
2 HQ ABERDEEN PG ATTN TECH LIB
1 CO USA INTELL CTR & SCH ATTN DIR OF ACADEMIC OPS FT HUACHUCA
1 CO USA INTELL CTR & SCH ATTN DIR OF DOC & LIT FT HUACHUCA
1 COMDT USA C&GSC OFC OF CHF OF RESIDENT INSTR FT LEAVENWORTH
1 COMDT USA CA SCH ATTN OFC OF DOCTRINE DEVEL LIT & PLNS FT BRAGG
1 COMDT USA CA SCH ATTN DOI FT BRAGG
1 COMDT USA CA SCH ATTN EDUC ADV FT BRAGG
1 COMDT USA CA SCH ATTN LIB FT BRAGG
1 COMDT USA SCH & TNG CTR ATTN ACOFS G3 TNG DIV FT MCCLELLAN
1 COMDT USA SCH & TNG CTR ATTN ACOFS G3 PLNS & OPS DIV FT MCCLELLAN
10 COMDT USA INST FOR MIL ASSIST ATTN DOI FT BRAGG
1 LIBN USAIS FT BENNING
8 COMDT USA FLD ARTY SCH ATTN DOI FT SILL
1 COMDT USA ARTY SCH ATTN EDUC SERVICES DIV FT SILL
1 COMDT USA ARTY SCH ATTN EDUC ADV FT SILL
1 COMDT USA TRANS SCH ATTN LIB FT EUSTIS
1 USA INST FOR MIL ASST ATTN EDUC ADV FT BRAGG
1 COMDT USA ARTY SCH ATTN LIB FT SILL
1 CG USA SCH & TNG CTR ATTN ACOFS G3 FT GORDON
1 DIR OF GRAD STUD & RSCH ATTN BEHAV SCI REP USAC&GSC
1 COMDT USA AD SCH ATTN AKBAAS-DL-EA FT BLISS
2 DIR BRGD + BN OPNS DEPT USAIS FT BENNING
1 DIR COMM ELEC USAIS FT BENNING
1 DIR ABN-AIR MOBILITY DEPT USAIS FT BENNING
1 CG USA SIG CTR & SCH ATTN ATSSC-OP-CO3 FT MONMOUTH
1 SECY OF ARMY, PENTAGON
1 DCS-PERS DA ATTN CHF C+S DIV
1 DIR OF PERS STUDIES & RSCH ODCSPER DA WASH DC
2 ACSFOR DA ATTN CHF TNG DIV WASH DC
1 CG USA MAT COMD ATTN AMCRD-TE
1 US ARMY BEHAVIOR & SYS RSCH LAB ATTNCRD-AR ARL VA
1 PROVOST MARSHAL GEN DA
1 OFC RESERVE COMPON DA
12 ADMIN DOC ATTN: TCA (HEALY) CAMERON STA ALEX., VA. 22314
1 CO US ARMY MED RES LAB FT KNOX
1 CHF OF R+D DA ATTN CHF TECH + INDSTR LIAISON OFC
1 CO USA CDC MED SERV AGCY FT SAM HOUSTON
1 USA BEHAVIOR & SYS RSCH LAB ATTN CRD-AIC ARL VA
1 CAREER MGT BR ATTN R DETIENNE CAMERON STA ALEX VA
1 USA LIB DIV-TAGO ATTN ASDIRS
1 PRES ARMY MAINT BD FT KNOX
1 CG CONARC ATTN COL E M HUDAK ATIT-SA FT MONROE
15 CG CONARC ATTN ATIT-STM FT MONROE
2 CG CONARC ATTN LIB FT MONROE
1 USA ARCTIC TEST CTR CHF INSTR & TEST METH DIV SEATTLE
1 CHF USA AD BRD FT BLISS
1 CHF USA ARMOR BRD FT KNOX
1 CHF USA AVN BRD FT RUCKER
1 CHF USA INF BRD FT BENNING
1 CHF USA TNG CTR BRD PRES OF MONTEREY
3 CG ARMY ARMOR CTR FT KNOX ATTN G3 AIRGT
1 CG 3RD INF DIV ATTN ACOFS G3 APO NY 09036
1 CG 7TH INF DIV ATT ACOFS G2 APO SAN FRAN 96207
3 CG 4TH INF DIV (MECH) & FT CARSON ATTN ACOFS G3
1 DA HQS FT CARSON & HQS 4TH INF DIV (MECH) ATT MAJ HARRIS
3 CG 82ND ABN INF DIV ATTN ACOFS G3 FT BRAGG
1 CG XVIII ABN CORPS ATTN ACOFS G3 FT BRAGG
1 CO 197TH INF BRGD FT BENNING ATTN S3
1 CO 2ND BN 15TH INF 3RD INF DIV ATTN S3 APO NY 09026
1 CO 4TH BN (MECH) 54TH INF ATTN S3 FT KNOX
2 DA OFC OF ASST CHF OF STAFF FOR COMM-ELCT ATTN CETS-6 WASH
1 USA RECRUITING COMD HAMPTON VA
1 DIR ARMY LIB PENTAGON
1 CHF OF MILIT HIST DA ATTN GEN REF BR
1 CO USA 10TH SPEC FORCES GP FT DEVENS
1 CG 31ST ARTY BDE AD ATTN S3 PA
1 CG 101ST ABN DIV (AIRMOBILE) ATTN ACOFS G3 APO SAN FRAN 96383
1 CG 1ST CAV (AIRMOBILE) ATTN ACOFS G3 APO SAN FRAN 96383
1 US ARMY TROPIC TEST CTR PO DRAWER 942 ATTN BEHAV SCIEN CZ
10 CG III CORPS & FT HOOD ATTN G3 SEC FT HOOD
30 CO 1ST ARMORED DIV ATTN G3 SEC FT HOOD
30 CG 2D ARMORED DIV ATTN G3 SEC FT HOOD
25 CO 13TH SUPT BGDE ATTN S3 SEC FT HOOD
1 CG USAFAC & FT SILL ATTN AKPSIGT-TNTN
20 CO III CORPS ARTY ATTN G3 SEC FT SILL
15 CO 1ST AIT BGDE ATTN G3 SEC FT BLISS
1 RSCH CONTRACTS & GRANTS BR ARO
1 BESD ARO OFC CHF OF R&D WASH DC
1 CHF OF R&D DA ATTN SCI INFO BR RSCH SPT DIV WASH DC
1 CINC US ATLANTIC FLT CODE 312A USN BASE NORFOLK
1 CDR TNG COMMAND US PACIFIC FLT SAN DIEGO
3 DIR PERS RES DIV BUR OF NAV PERS
1 TECH LIB BUR OF SHIPS CODE 210L NAVY DEPT
1 CO FLT ANTI-AIR WARFARE TNG SAN DIEGO
1 CO NUCLEAR WPNS TNG CTR PACIFIC US NAV AIR STA SAN DIEGO
1 CO FLEET TNG CTR US NAV STA SAN DIEGO
1 CO FLT ANTI-SUB WARFARE SCH SAN DIEGO
1 CHF OF NAVL RSCH PERS & TNG BR (CODE 458) ARL VA
1 DIR US NAV RES LAB ATTN CODE 5120
1 DIR NAVAL RSCH LAB ATTN LIB CODE 2029 WASH DC
1 CO MED FLD RES LAB CAMP LEJEUNE
1 DIR AEROSPACE CREW EQUIP LAB NAV AIR ENGNR CTR PA
5 COMDT MARINE CORPS HQ MARINE CORPS ATTN CODE AO-18
1 HQ MARINE CORPS ATTN AX
1 DIR MARINE CORPS INST ATTN EVAL UNIT
1 US MARINE CORPS HQS HIST REF LIB ATTN MRS JADOT
1 CHF OF NAV AIR TECH TNG NAV AIR STA MEMPHIS
1 DIR OPS EVAL GRP OFF OF CHF OF NAV OPS OPO3EG
1 CO US COAST GUARD TNG CTR GOVERNORS ISLAND NY
1 CO US COAST GUARD TNG CTR CAPE MAY NJ
1 CO US COAST GUARD TNG CTR & SUP CTR ALAMEDA CALIF
1 CO US COAST GUARD INST OKLA CITY OKLA
1 CO US COAST GUARD RES TNG CTR YORKTOWN VA
1 SUPT US COAST GUARD ACAD NEW LONDON CONN
1 TECH DIR TECH TNG DIV(HRD) AFHRL LOWRY AFB COLO
1 CHF SCI DIV OKCTE SCI + TECH DCS R+D HQ AIR FORCE AFRSTA
1 AFHRL/TT ATTN CAPT W S SELLMAN LOWRY AFB
1 HQ SAMSO (SMSIR) AF UNIT POST OFC LA AFS CALIF
2 AFHRL (HRT) WRIGHT-PATTERSON AFB
1 AMD AMRH BROOKS AFB TEXAS
2 CO HUMAN RESOURCES LAB BROOKS AFB
1 COMDT USAF SPEC OP SCH (TAC) EGLIN AFB
1 AFHRL (FT) WILLIAMS AFB ARIZ
1 PSYCHOBIOLOGY PROG NATL SCI FOUND
1 DIR NATL SECUR AGY FT GEO G MEADE ATTN TDL
3 CIA ATTN CRS/ADD STANDARD DIST
1 SYS EVAL DIV RES DIRECTORATE DDU-DCD PENTAGON
1 DEPT OF STATE BUR OF INTEL + RES EXTERNAL RES STAFF
1 SCI INFO EXCH WASHINGTON
2 CHF MGT & GEN TNG DIV TH 200 FAA WASH DC
1 BUR OF RES & ENGR US POST OFC DEPT ATTN CHF HUMAN FACTORS BR
1 EDUC MEDIA BR OF HEW ATTN T D CLEMENS

1 NAT'L BUR STANDS BEHAV SCI GP ATTN DR D E ERLICK
1 OFC OF INTERNATL TNG PLANNING & EVAL BR AID WASH DC
1 DEPT OF TRANS FAA ACQ SEC HQ 610A WASH DC
2 ERIC DE WASH DC
2 DUNLAP + ASSOC INC DARIEN ATTN LIB
2 RAC ATTN LIB MCLEAN VA
1 MITRE CORP BEDFORD MASS ATTN LIB
2 LEARNING R&D CTR U OF PITTS ATTN DIR
2 TECH INFO CTR ENGNR DATA SERV N AMER AVN INC COLUMBUS O
1 CHRYSLER CORP MSL DIV DETROIT ATTN TECH INFO CTR
1 GEN DYNAMICS POMONA DIV ATTN LIB DIV CALIF
1 MGR BIOTECHNOLOGY AEROSPACE SYS DIV MS 8H-25 BOEING CO SEATTLE
1 IDA RSCH & ENG SUPT DIV ARL VA
1 SCI & TECH DIV IDA ARL VA
1 HUGHES AIRCRAFT COMPANY CULVER CITY CALIF
1 DIR CTR FOR RES ON LEARNING + TEACHING U OF MICH
1 EDITOR TNG RES ABSTR AMER SOC OF TNG DIRS U OF TENN
3 AUSTRALIAN NAV ATTACHE EMBSY OF AUSTRALIA WASH DC
2 AUSTRALIAN ARMY ATTACHE EMBSY OF AUSTRALIA ATTN TECH CLK
1 MENNINGER FOUNDATION TOPEKA
1 AMER INSTS FOR RSCH SILVER SPRING
1 AMER INSTS FOR RSCH ATTN LIBN PA
1 DIR PRIMATE LAB UNIV OF WIS MADISON
1 EDUC & TNG CONSLT CO LA CALIF
1 DR GEORGE T HAUTY CHMN DEPT OF PSYCHOL U OF DEL
1 HEAD DEPT OF PSYCHOL UNIV OF SC COLUMBIA
1 U OF GEORGIA DEPT OF PSYCHOL
1 GE CO WASH D C
1 AMER INST FOR RSCH ATTN LIB PALO ALTO CALIF
1 ROWLAND + CO HADDONFIELD NJ ATTN PRES
1 OHIO STATE U SCH OF AVN
2 AIRCRAFT ARMAMENTS INC COCKEYSVILLE MD
1 DR J R COLLEN DEPT OF SOC & ANTHROP UNIV OF RI
1 AMER PSYCHOL ASSOC WASHINGTON ATTN PSYCHOL ABSTR
1 NO ILL U HEAD DEPT OF PSYCHOL
1 GEORGIA INST OF TECH DIR SCH OF PSYCHOL
1 LIFE SCI INC HURST TEXAS ATTN W G MATHENY
1 AMER BEHAV SCI CALIF
1 SO ILLINOIS U DEPT OF PSYCHOL
2 WASH MILITARY SYS TECH LIB DIV BETHESDA MD
1 NORTHWESTERN U DEPT OF INDSTR ENGNR
1 DR L TWYFORD NY STATE EDUC DEPT ABSTRACT EDITOR AVCR
1 AEROSPACE SAFETY DIV U OF SOUTHERN CALIF LA
1 MR BRANDON B SMITH RES ASSOC U OF MINN

1 DR V ZACHERT RT 1 GOOD HOPE GA
1 DR S RUSCOE ASSOC DIR FOR RSCH INST OF AVN U OF ILL
1 DR C HELM DEPT EDUC PSYCH CITY U OF NY
1 GEN H P HARRIS (USA RET)PRES THE CITADEL SC
1 DR H SHOEMAKER DIR TNG RSCH GP NY
1 VOC-TECH EDUC PROG PLNNG DEV ATTN W STOCK ST PAUL
1 CHF PROCESSING DIV DUKE U LIB
1 U OF CALIF GEN LIB DOCU DEPT
1 PSYCHOL LIB HARVARD UNIV CAMBRIDGE
1 U OF ILL LIB SER DEPT
2 U OF KANSAS LIB PERIODICAL DEPT
1 U OF NEBRASKA LIBS ACQ DEPT
1 OHIO STATE U LIBS GIFT + EXCH DIV
1 PENNA STATE U PATTEE LIB DOCU DESK
1 PURDUE U LIBS PERIODICALS CHECKING FILES
1 STANFORD U LIBS DOCU LIB
1 LIBN U OF TEXAS
1 SYRACUSE U LIB SER DIV
1 SERIALS REC UNIV OF MINN MINNEAPOLIS
1 STATE U OF IOWA LIBS SER ACQ
1 NO CAROLINA STATE COLL DH HILL LIB
2 BOSTON U LIBS ACQ DIV
1 U OF MICH LIBS SER DIV
1 BROWN U LIB
1 COLUMBIA U LIBS DOCU ACQ
1 DIR JOINT U LIBS NASHVILLE
2 LIB GEO WASH UNIV ATTN SPEC COLL DEPT WASH DC
2 LIB OF CONGRESS CHF OF EXCH + GIFT DIV
1 U OF PGH DOCU LIBN
1 CATHOLIC U LIB EDUC & PSYCHOL LIB WASH DC
1 U OF KY MARGARET I KING LIB
1 SO ILL U ATTN LIBN SER DEPT
1 BRIGHAM YOUNG U LIB SER SECT
1 U OF LOUISVILLE LIB BELKNAP CAMPUS
1 GEORGETOWN U LIB SER DEPT WASH DC
1 LIBS COLO STATE U ATTN DOC LIBN FT COLLINS
1 CG USACDC FT BELVOIR
1 CO USACDC SUPPLY AGCY FT LEE
1 CG USA COMPUTER SYS COMD SUPPORT GP FT LEE
1 CG USA COMPUTER SYS COMD FT LEE
1 CG LOG DOCTRINE SYS & READINESS AGCY PA
1 DCSLOG DA ATTN LOG SYS OFC WASH DC
1 USA LOG MGT CTR FT LEE

ERIC Clearinghouse
JUL 28 1972
on Adult Education

## HUMAN RESOURCES RESEARCH ORGANIZATION

**300 North Washington Street • Alexandria, Virginia 22314**

| | |
|---|---|
| **President** | Dr. Meredith P. Crawford |
| **Executive Vice President** | Dr. William A. McClelland |
| **Director for Business Affairs and Treasurer** | Mr. Charles W. Smith |
| **Director for Operations** | Mr. Arnold A. Heyl |
| **Director for Program Development** | Dr. Robert G. Smith, Jr. |
| **Director for Research Design and Reporting** | Dr. Eugene A. Cogan |

### RESEARCH DIVISIONS

| | |
|---|---|
| **HumRRO Division No. 1 (System Operations)**<br>300 North Washington Street<br>Alexandria, Virginia 22314 | Dr. J. Daniel Lyons<br>Director |
| **HumRRO Division No. 2**<br>Fort Knox, Kentucky 40121 | Dr. Donald F. Haggard<br>Director |
| **HumRRO Division No. 3**<br>Post Office Box 5787<br>Presidio of Monterey, California 93940 | Dr. Howard H. McFann<br>Director |
| **HumRRO Division No. 4**<br>Post Office Box 2086<br>Fort Benning, Georgia 31905 | Dr. T.O. Jacobs<br>Director |
| **HumRRO Division No. 5**<br>Post Office Box 6057<br>Fort Bliss, Texas 79916 | Dr. Albert L. Kubala<br>Director |
| **HumRRO Division No. 6 (Aviation)**<br>Post Office Box 428<br>Fort Rucker, Alabama 36360 | Dr. Wallace W. Prophet<br>Director |
| **HumRRO Division No. 7 (Social Science)**<br>300 North Washington Street<br>Alexandria, Virginia 22314 | Dr. Arthur J. Hoehn<br>Director |